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1008

CTF-TEST-R164P1008

Exemption 6

R718106
and
R718108

W31 Forklift Shock, Truck
Transportation Vibration and Launch
Vibration Environments

Exemption 6

RECEIVED
OCT 11 '85
CENTRAL TECH FILE

~~44~~
31-Prng

Approved by:

J D Woodall
Test Engineer, 7542A

Distribution:

5113 R. W. Jorgensen

Attn: C. E. Johnston

7542A File

3144 Central Technical File

172

001009

R718106
and
R718108

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001010

TEST PLANNING REQUEST

Requester (Last, First, Middle Initial) Johnston, Carl E.		Org. 5113	Bldg. 836	Phone 4-7122	Case Number 1382.010
Object Leader/Engineer/Engineer/TC Dan Gregory		Org. 7542	Phone 4-1074	Date May 24, '85	Test Number R-718106
Test Item W31Y-3 Warhead on H541B Handling Dolly	Dwg. No. CD301708	Approximate Dimensions W31= 900 H541= 500 Total= 1400 lbs Total: 41" W x 59" L x 48" H (Warhead Max. dia = 29")		Total Quantity 1 ea Test System	
Security Classifications Highest = CRD	Name UNC	Test Item CRD	Association UNC	Visual UNC	Data/Report UNC
Form UNC					

☐ CNWDI Material* ☐ Category I SS Material* (Security Procedures Required When Marked)

*Security escort and/or protection of material required if either item checked.

Hazards ☒ None ☐ Yes (Hazards Information Form Required When Marked)

Type ☐ Explosives Self Contained ☐ SS Material ☐ Toxic Material

☐ Explosives Other ☐ Pressure Devices ☐ Other Hazards

Title of Test **W31 Transportation Vibration and Forklift Shock, XYZ, Room Temp.**

Purpose: **To test the capability of the W31 Warhead Electrical Assembly to function properly after exposure to truck transport vibration and Forklift handling shock.**

Description: **Refer to the Attachment for test specs, warhead axes definition, along with the requirements for instrumentation, data acquisition, etc.**

Test Unit Available

Test Start Date **5/29/85** Test Period _____ Estimated Test Duration _____
 Report Desired ☒ Complete Report ☐ Data Report ☐ Memo ☐ No Report
 Cost Estimate Desired ☒ No ☐ Yes (Environmental Test Estimate Form Required When Marked)
 Test Fixture Available ☐ No ☐ Yes ☐ New Fixture (None required)

Test Support Activities

General Test	Resp. Org.
<input checked="" type="checkbox"/> Test Plan/Specifications	5113
<input checked="" type="checkbox"/> Instrumentation List	5113
<input type="checkbox"/> Test Control Drawing	
<input checked="" type="checkbox"/> Safe Operating Procedures	7542
<input checked="" type="checkbox"/> Test Report Distribution	5113

Test Support	Org.
<input checked="" type="checkbox"/> Still Photography	7542
<input type="checkbox"/> Photometrics (Data)*	
<input type="checkbox"/> Photometrics (Documentary)	
<input type="checkbox"/> TM Design	

General Test	Resp. Org.
<input checked="" type="checkbox"/> Vibration Test Spec.*	5113
<input checked="" type="checkbox"/> Shock Test Spec.*	5113
<input type="checkbox"/> Acceleration Test Spec.*	
<input type="checkbox"/> Climatic Test Spec.*	
<input type="checkbox"/> Static Test Spec.	

Test Support	Org.
<input type="checkbox"/> TM Recording	
<input type="checkbox"/> Instrumentation Design	
<input type="checkbox"/> Facility Design*	
<input type="checkbox"/> Flash X-Ray	

*Supplemental Form Required when marked

Test Location ☐ AI ☒ AIII ☐ Coyote ☐ Other _____

Test Facility	Bldg.
<input type="checkbox"/> Centrifuge	
<input type="checkbox"/> Climatic	
<input type="checkbox"/> Radiant Heat	
<input checked="" type="checkbox"/> Vibration *	6560
<input type="checkbox"/> Static Lab	
<input type="checkbox"/> Pressure Lab	

Test Facility	Bldg.
<input type="checkbox"/> Shock Lab	
<input type="checkbox"/> 18-in. Actuator	
<input type="checkbox"/> Ramp and Drop	
<input type="checkbox"/> Sled Track	
<input type="checkbox"/> Rocket Launcher	
<input type="checkbox"/> Ballistics Lab	

Test Facility	Bldg.
<input type="checkbox"/> Aerial Cable	
<input type="checkbox"/> Shock Tube	
<input type="checkbox"/> Explos. Firing Site	
<input type="checkbox"/> Drop Tower	
<input type="checkbox"/> Radiograph/NDT	
<input type="checkbox"/> Other	

SA 7884-B (Rev. 7-81) * Dynamic & hydraulic shakers

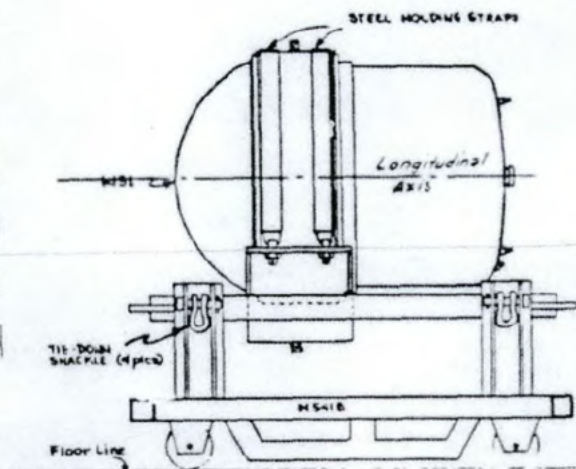
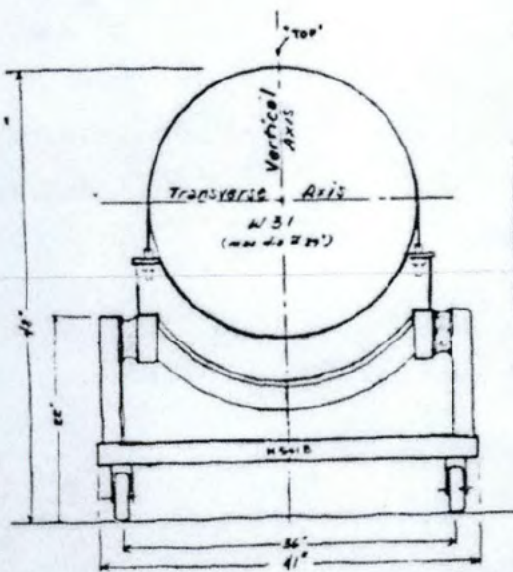
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ATTACHMENT
(R 718106)
Page 1 of 5W31Y1-3 Truck-Transport Vibration & Forklift Shock
TEST SPECSTransportation Random Vibration - W31. (1)

Axis	Environmental Source	Test Duration (hrs.)	Reference Figure
Vertical	Truck	3	1
Transverse	Truck	3	2
Longitudinal	Truck	3	3

Handling Shock - W31 and Components. (1)

Axis	Environmental Source	Number of Shock/Axis	Reference Figures	Reference Table
Transverse	Forklift	2 (2)	4 & 5	1

W31 DEFINITION OF AXES
(Not to Scale)

[B - Accelerometer]

- (1) W31 shall be stabilized at room temperature
- (2) In the same direction

001012

W31Y1-3 Truck Transport Vibration Forklift Shock Control

ATTACHMENT
(R 718106)
Page 2 of 5TABLE 1 - DISCRETE SHOCKS FOR FORKLIFT TRANSPORT
DECAYED SINUSOID PULSES $A_0 e^{-2 ft} \sin(2 ft)$
FORKLIFT - LONGITUDINAL*

Pulse No.	$A_0(g)$	$A(g)$		$f(Hz)$	Duration (sec.)	Delay Time (sec.)
1	1.53	1.0	0.3	2.0	0.84	0.138
2	1.2	0.89	0.2	4.5	0.84	0.138
3	2.44	2.1	0.1	9.0	0.84	0.138
4	15.04	9.81	0.3	40.0	0.84	0.138
5	7.35	6.6	0.07	70.0	0.84	0.138
6	9.01	7.85	0.09	100.0	0.84	0.138
7	-3.2	-1.12	0.9	1.0	0.84	0.0

Peak Accel. = 21 g, -1.5 g

Max Vel. = 23.47 in/sec., -42.24 in/sec.

Max Displ. = 1.66 in, -2.5 in

* Corresponds to Transverse Axis of W31

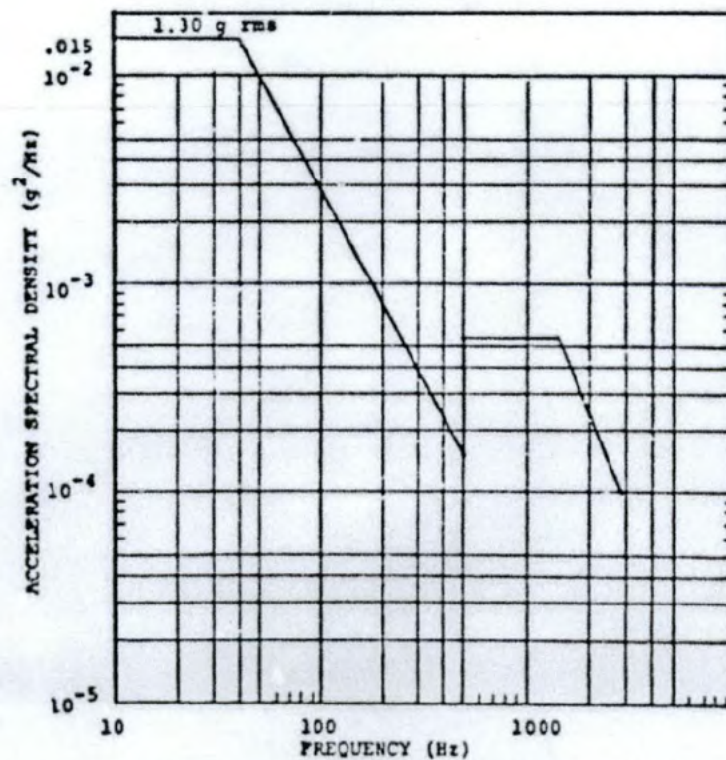


FIGURE 1 - TRUCK RANDOM VIBRATION VERTICAL AXIS

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ATTACHMENT
(R718106)
Page 3 of 5

W31Y1-3 Truck Transport Vibi. & Forklift Shock ---- Contd

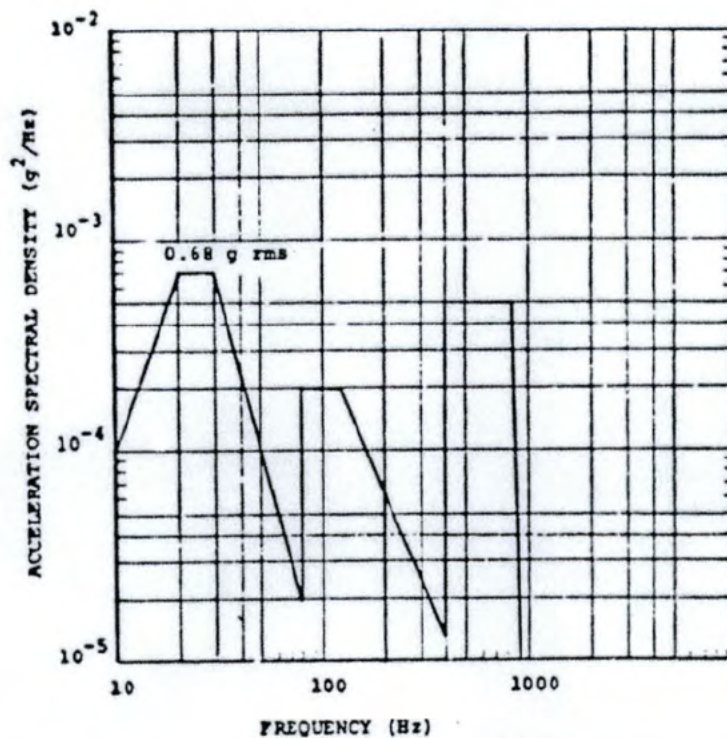


FIGURE 2 - TRUCK RANDOM VIBRATION TRANSVERSE AXIS

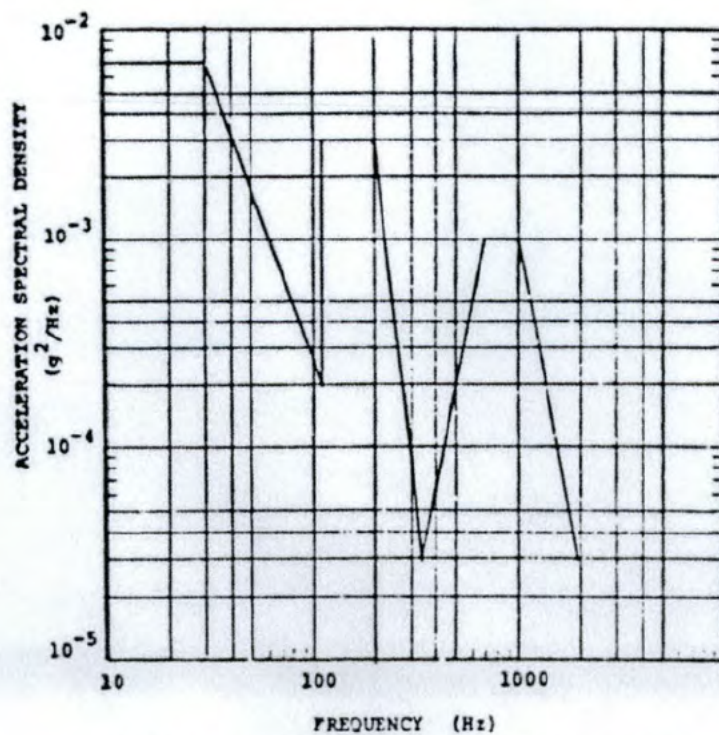


FIGURE 3 - TRUCK RANDOM VIBRATION LONGITUDINAL AXIS

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ATTACHMENT
(R718106)
Page 4 of 5

W31Y1-3 Truck Transport Vibri & Forklift Shock - Cont'd.

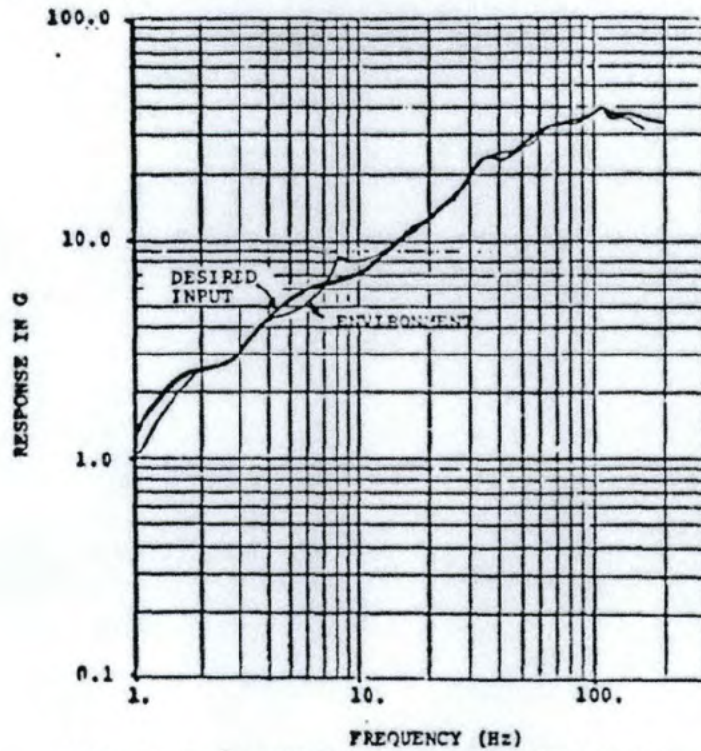


FIGURE 4 - FORKLIFT SHOCK - TRANSVERSE SHOCK SPECTRA
(NOTE: W31 Vehicle axis is longitudinal.)

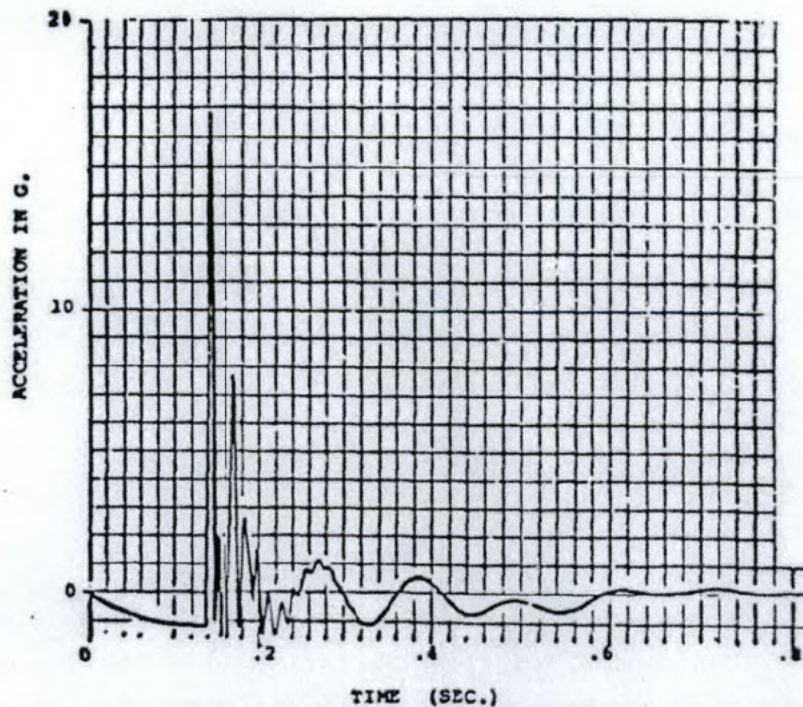


FIGURE 5 - FORKLIFT SHOCK - TRANSVERSE TIME HISTORY
(NOTE: W31 Vehicle axis is longitudinal.)

001015

ATTACHMENT
Page 5 of 5
(B718106)

INSTRUMENTATION

- 1 ENDEVCO 2228C on "top" of W31
- 1 ENDEVCO 2228C on H541B dolly cradle for W31.
(See "W31 Definition of Axes" figure on Page 1.

DATA RECORDING

ASD's only; in-axis only for the 2 accelerometers noted above, for vib'n. One of Ampl. vs. freq. for each shock impulse.

REPORT DISTRIBUTION

R.W. Jorgensen, 5113 (Attn: Carl Johnston)

PHOTOGRAPHY

- 1 Color shot of test setup.

TIE-DOWN

Coil chain, steel, to shackles shown in figure; tighten with aircraft type tie-downs.

001010

TEST PLANNING REQUEST

Test Project Leader/Engineer/Engineer/TC <u>Dan Gregory</u>	Org. <u>7542</u>	Phone <u>4-1074</u>	Date <u>Issue B</u> <u>July 1, 1985</u> <u>June 18, 1985</u>	Test Number <u>R-718108</u>
Requester (Last, First, Middle Initial) <u>Johnston, Carl E., Jr.</u>	Org. <u>5113</u>	Bldg. <u>836</u>	Phone <u>4-7122</u>	Case Number <u>1382.010</u>
Test Item <u>W31 Warhead Elec. Assy</u> <u>With Covers</u>	Dwg. No. <u>CD301708</u>	Approximate Dimensions Weight <u>400lbs*</u> Size <u>30"dia x 24"H.</u>		Total Quantity <u>1 Ea Test System</u>
Responsible Design Org. <u>5113</u>				
Security Classifications <u>Highest = CRD</u>	Name <u>UNC</u>	Test Item <u>CRD</u>	Association <u>UNC</u>	Visual <u>UNC</u>
			Date/Report <u>UNC</u>	Form <u>UNC</u>

☐ CNWDI Material* ☐ Category I SS Material* (Security Procedures Required When Marked)

*Security escort and/or protection of material required if either item checked.

Hazards ☒ None ☐ Yes (Hazards Information Form Required When Marked)
 Type ☐ Explosives Self Contained ☐ SS Material ☐ Toxic Material
☐ Explosives Other ☐ Pressure Devices ☐ Other Hazards

*... Test Item mounted on Test Fixture.

Title of Test W31 Warhead Elec. Assy. Flight. Vibration at Rm, Hot & Cold Temps.

Purpose: To determine the capability of the W31 Warhead Electrical Assembly to function (AF&F) after exposure to flight vibration at launch-environment ambient, hot and cold temperatures.

Description: Refer to the attachment for test specs and warhead axes definition, along with the requirements for instrumentation, data acquisition, etc.

Date Available for Test

Test Start Date 7/2/85 Test Period _____ Estimated Test Duration 2 weeks

Report Desired ☒ Complete Report ☐ Data Report ☐ Memo ☐ No Report

Cost Estimate Desired ☒ No ☐ Yes (Environmental Test Estimate Form Required When Marked)

Test Fixture Available ☐ No ☒ Yes ☐ New Fixture

Test Support Activities

General Test	Resp. Org.
<input checked="" type="checkbox"/> Test Plan/Specifications	<u>5113</u>
<input checked="" type="checkbox"/> Instrumentation List	<u>5113</u>
<input type="checkbox"/> Test Control Drawing	
<input checked="" type="checkbox"/> Safe Operating Procedures	<u>7542</u>
<input checked="" type="checkbox"/> Test Report Distribution	<u>5113</u>

General Test	Resp. Org.
<input checked="" type="checkbox"/> Vibration Test Spec.*	<u>5113</u>
<input type="checkbox"/> Shock Test Spec.*	
<input type="checkbox"/> Acceleration Test Spec.*	
<input type="checkbox"/> Climatic Test Spec.*	
<input type="checkbox"/> Static Test Spec.	

Test Support	Org.
<input checked="" type="checkbox"/> Still Photography	<u>7542</u>
<input type="checkbox"/> Photometrics (Data)*	
<input type="checkbox"/> Photometrics (Documentary)	
<input type="checkbox"/> TM Design	

Test Support	Org.
<input type="checkbox"/> TM Recording	
<input type="checkbox"/> Instrumentation Design	
<input type="checkbox"/> Facility Design*	
<input type="checkbox"/> Flash X-Ray	

*Supplemental Form Required when marked

Test Location ☐ AI ☒ AIII ☐ Coyote ☐ Other _____

Test Facility	Bldg.
<input type="checkbox"/> Centrifuge	
<input type="checkbox"/> Climatic	
<input type="checkbox"/> Radiant Heat	
<input checked="" type="checkbox"/> Vibration	<u>6560/6610</u>
<input type="checkbox"/> Static Lab	
<input type="checkbox"/> Pressure Lab	

Test Facility	Bldg.
<input type="checkbox"/> Shock Lab	
<input type="checkbox"/> 18-in. Actuator	
<input type="checkbox"/> Ramp and Drop	
<input type="checkbox"/> Sled Track	
<input type="checkbox"/> Rocket Launcher	
<input type="checkbox"/> Ballistics Lab	

Test Facility	Bldg.
<input type="checkbox"/> Aerial Cable	
<input type="checkbox"/> Shock Tube	
<input type="checkbox"/> Explos. Firing Site	
<input type="checkbox"/> Drop Tower	
<input type="checkbox"/> Radiograph/NOT	
<input type="checkbox"/> Other	

001017

Attachment
Page 1 of 4
(2418108)W31 Warhead Electrical Assembly Flight Vibration
Test Specifications

<u>Axis</u>	<u>Test Duration/Axis (min.)</u>	<u>Reference Table</u>
Vertical and Transverse	5	1
Longitudinal	5	2

TABLE 1 - FLIGHT RANDOM VIBRATION - W31
VERTICAL AND TRANSVERSE AXES

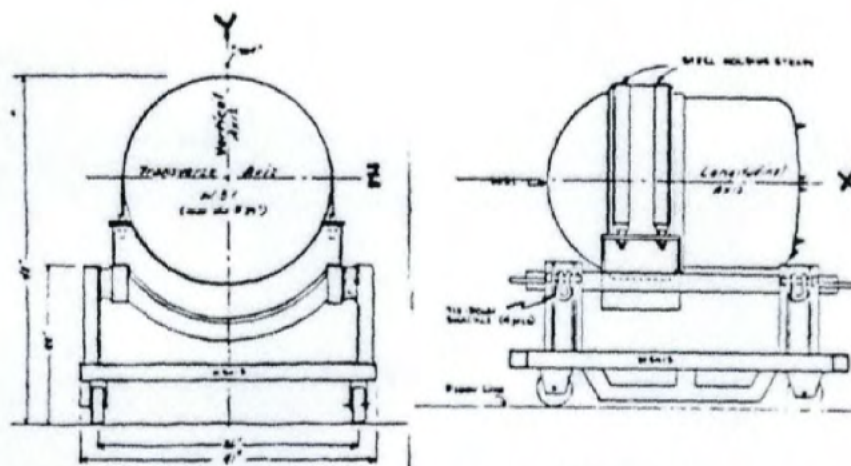
<u>Frequency (Hz)</u>	<u>Acceleration Spectral Density (g^2/Hz)</u>
10 - 90	2.5E-4
90 - 130	2.5E-4
130 - 180	4.6E-2
180 - 220	4.6E-2
220 - 300	4.38E-4
300 - 350	4.38E-4
350 - 1000	4.30E-2
1000	4.30E-2
$G_{rms} = 3.09$	

TABLE 2 - FLIGHT RANDOM VIBRATION - W31
LONGITUDINAL AXES

<u>Frequency (Hz)</u>	<u>Acceleration Spectral Density (g^2/Hz)</u>
10 - 20	1.71×10^{-4}
20 - 40	8.75×10^{-5}
40 - 80	4.38×10^{-5}
80 - 120	1.08×10^{-3}
120 - 180	4.60×10^{-2}
180 - 240	7.18×10^{-4}
240 - 340	4.38×10^{-4}
340 - 500	5.30×10^{-2}
500 - 700	3.10×10^{-2}
700 - 1000	4.60×10^{-3}
1000 - 1400	4.68×10^{-6}
1400 - 2000	3.12×10^{-6}
$G_{rms} = 8.82$	

001018

Attachment
Page 2 of 4
(R718108)



Complete Warhead (for axes definition only) on Dolly

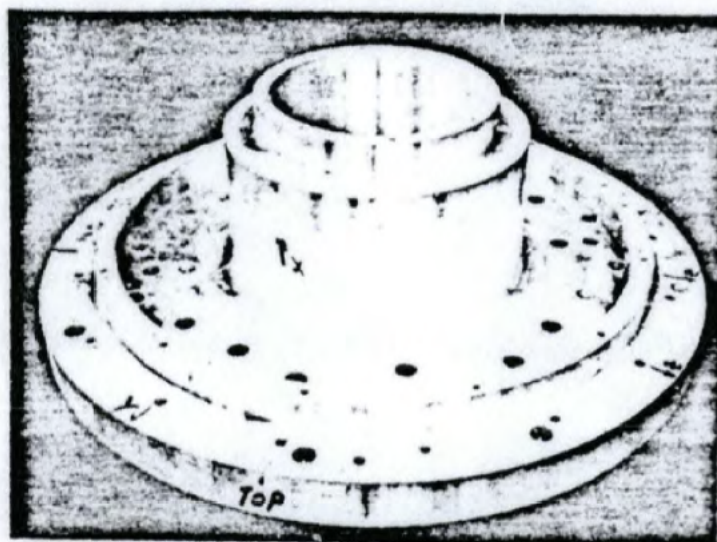


Fig 1.... Test Fixture

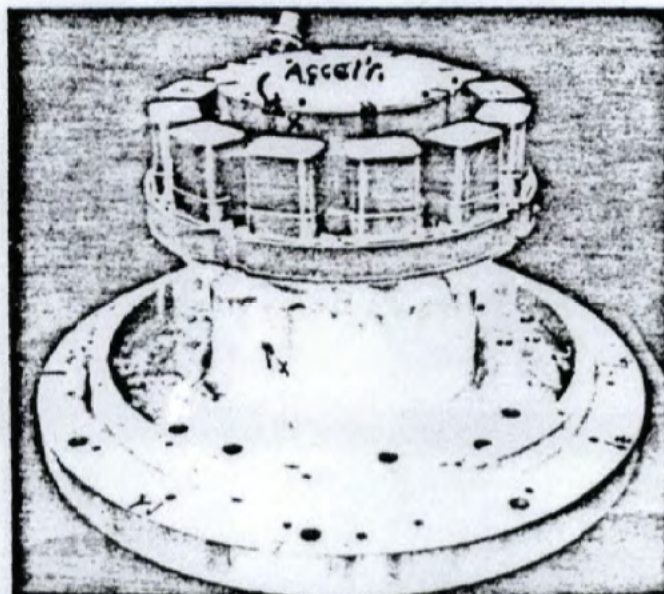


Fig. 2.... Firing Set Mounted on Test Fixture

001019

Attachment
Page 3 of 4
(R 718108)

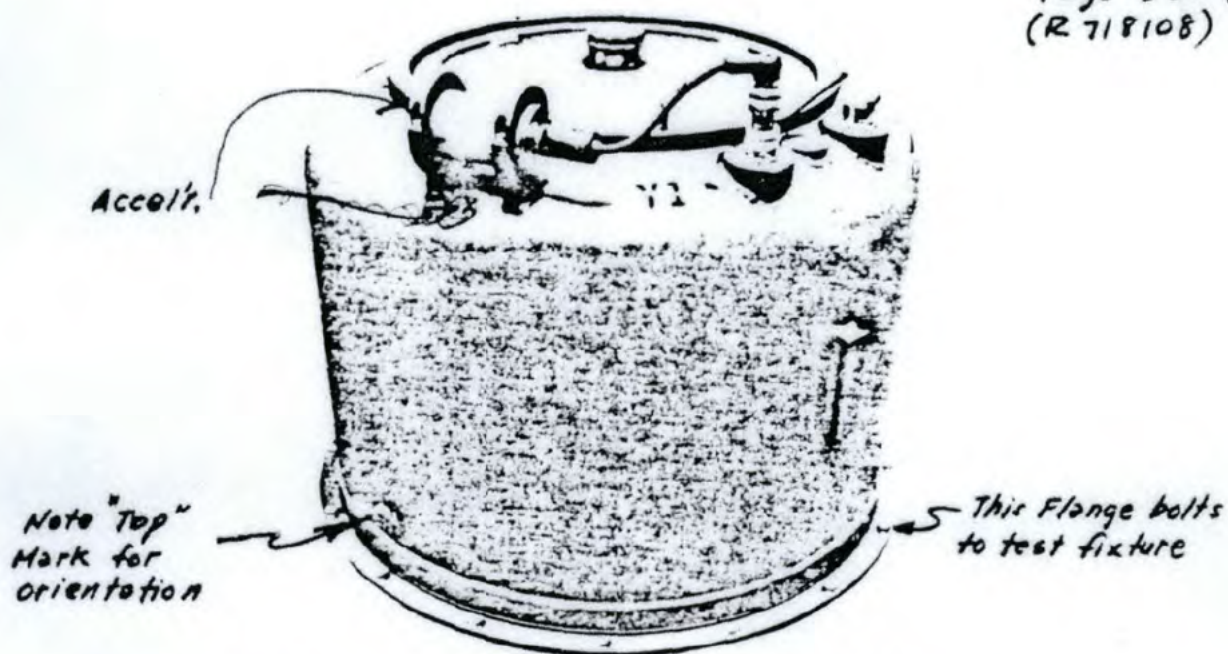


Fig. 3... W31 Warhead Elec. Assy. With Covers

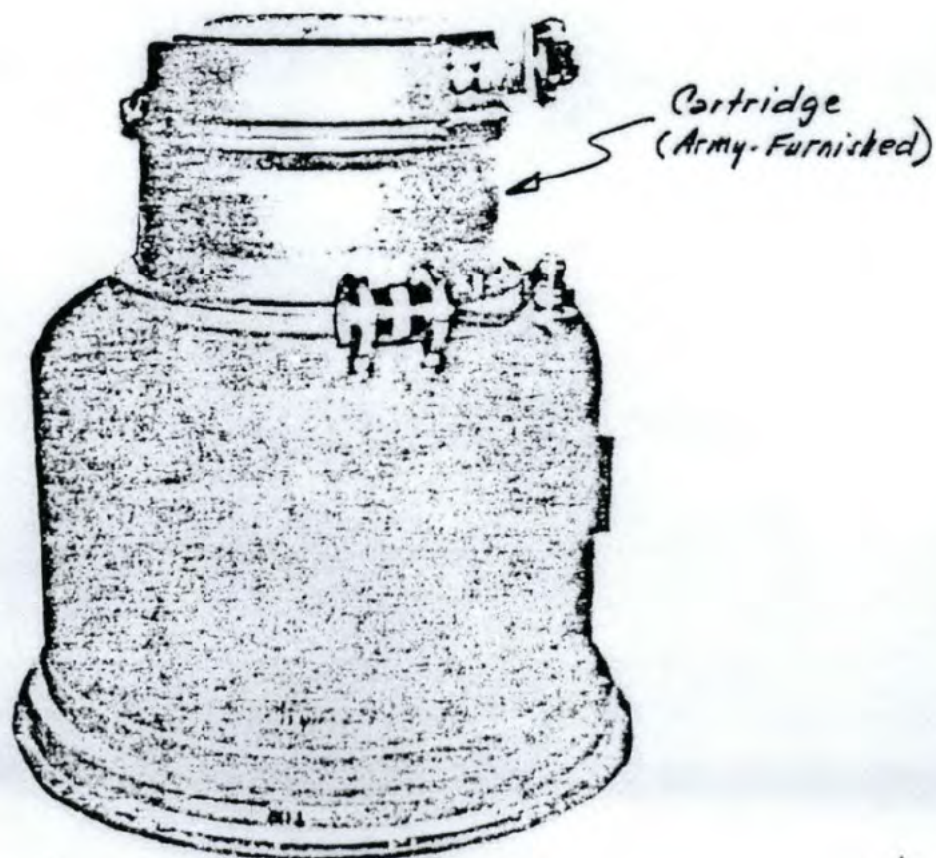


Fig. 4... Complete Test System

001020

Attachment
Page 4 of 4
(R 718108)

Test system shall be vibrated in accordance with the above specifications while stabilized at each of the following temperatures:

Room Ambient, -25°F + 125°F

Order of vibration with regard to axis and temperature is immaterial.

INSTRUMENTATION

Locate one triaxial accelerometer (Endevco Mod. 2228C) at each of the following locations (also, see figures above):

Top of Pressure Cover, near MC3761 (see Fig 3)

Side of Firing Set Housing (see Fig. 2)

DATA RECORDING

ASD's only; in-axis only for each accelerometer; for each vibration run.

REPORT DISTRIBUTION

R.W. Jorgensen-5113; Attn: C.E. Johnston

PHOTOGRAPHY

One color exposure of test setup for room temp. vib'n. only.

001021

Carl Johnston:

Re: Torque values for assembly of
W31-3 Vibration Unit.

All Connector Nuts - 100 IN LBS

10-32 Screws - 25 IN LBS

1/4 - 28 BOLTS - ⁶⁰~~75~~ IN LBS
(STEEL COVER)

5/16 x 24 BOLTS - 120 IN LBS
(ALUMINUM COVER)

Jim Phillips

001022

Introduction

A series of forklift handling shock and truck transportation vibration tests were performed in a W31 Y1-3 Warhead on a H541B handling dolly to determine the capability of the W31 Warhead electrical assembly to function after exposure to these environments. This testing was conducted June 7, 1985 through June 11, 1985 in Bldg. 6560.

The W31 Warhead Electrical assembly was also exposed to flight vibration at launch environments at hot, cold and ambient temperatures to determine its capability to function after exposure to these environments. This testing was conducted July 3, 1985 through July 15, 1985 in Bldg. 6610.

001023

Testing Procedure and Results

The forklift shock testing was performed on the hydraulic shaker system in Bldg. 6560. This setup is shown in Figure 1. The truck transportation was performed on the C220 electrodynamic shaker in Bldg. 6560. These test setups are shown in Figures 2, 3 and 4 with the control and response accelerometers shown in Figures 5, 6 and 7. The launch vibration environments were performed on the electrodynamic shakers in Bldg. 6610. This setup is shown in Figure 8. Color photographs corresponding to Figures 1-8 are given in the Appendix.

Data for the forklift shock test are shown in Figures 9-14. Data for the truck transportation vibration test are shown in Figures 15-23. Data for the launch vibration environments are shown in Figures 24-49. The accelerometer near the MC3761 was not functional for the Y axis -25° run, and the accelerometer on the side of the firing set housing was not functional for the Z axis +125°F run.

C85-100,701
R710106
Unclassified

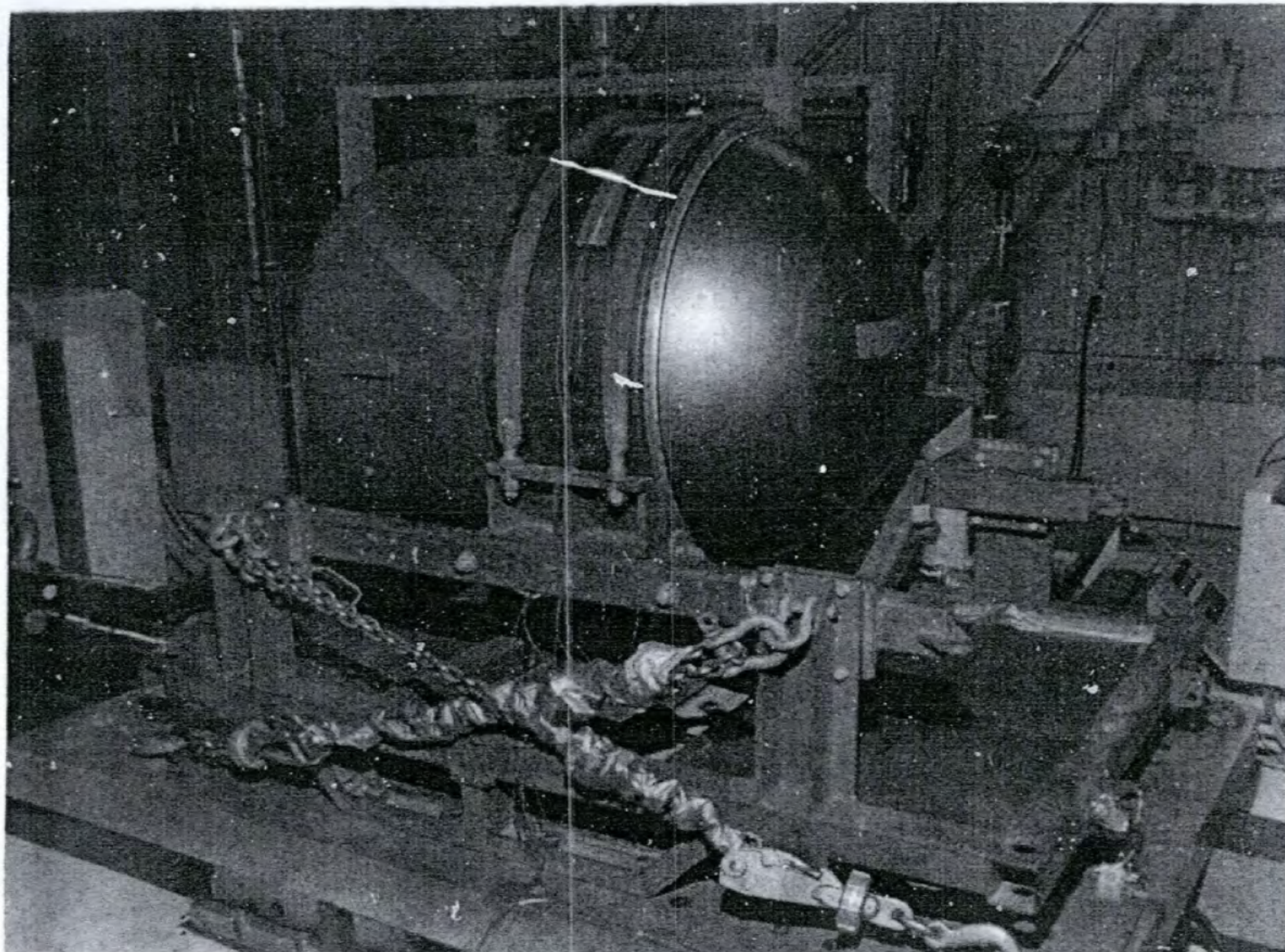


Figure 1 - Forklift Shock Setup

001024

CS5-100,700
R718106
Unclassified

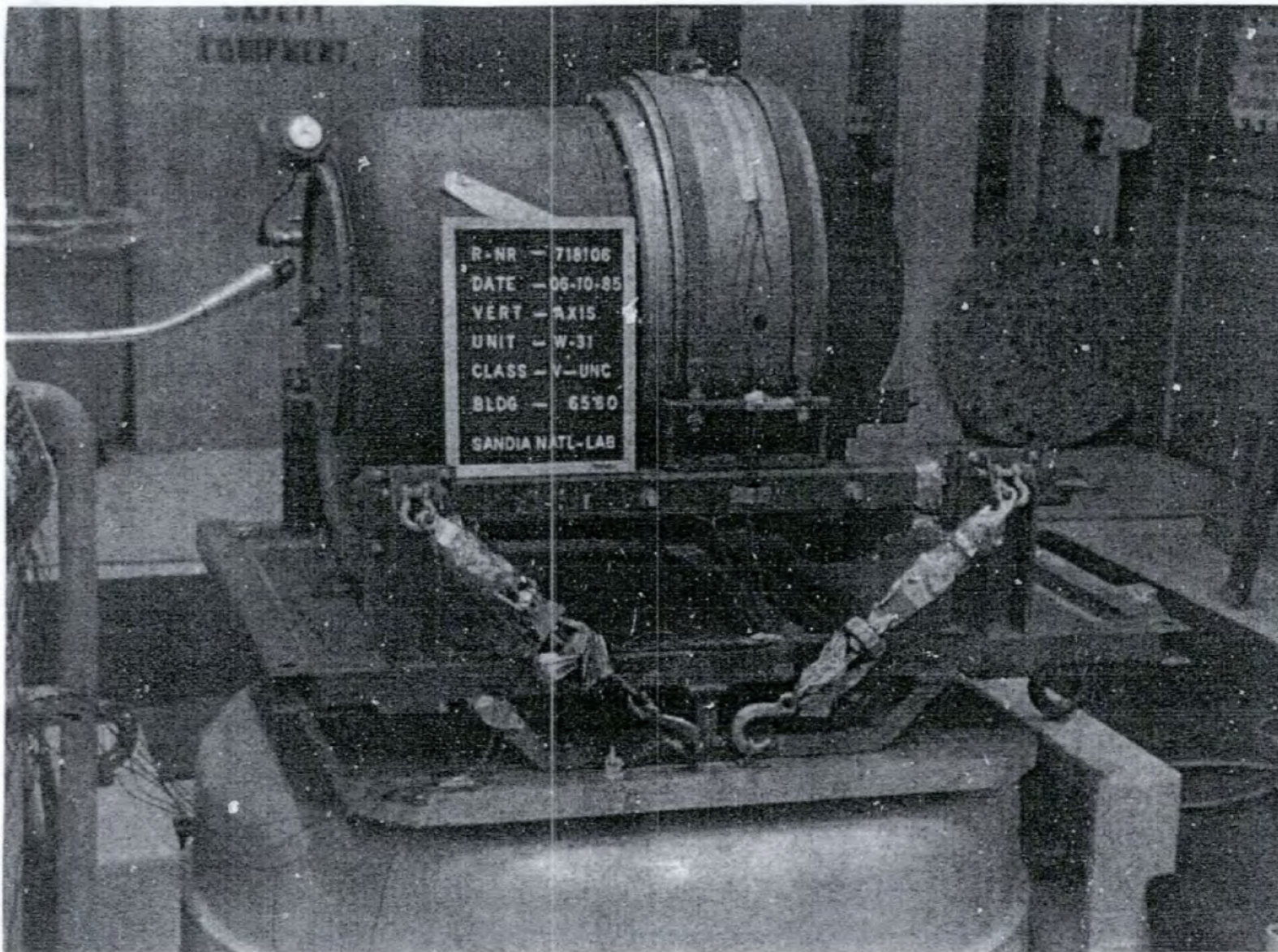


Figure 2 - Truck Vib, 2000 - Vertical Setup

001025

C85-100,697
8718106
Unclassified

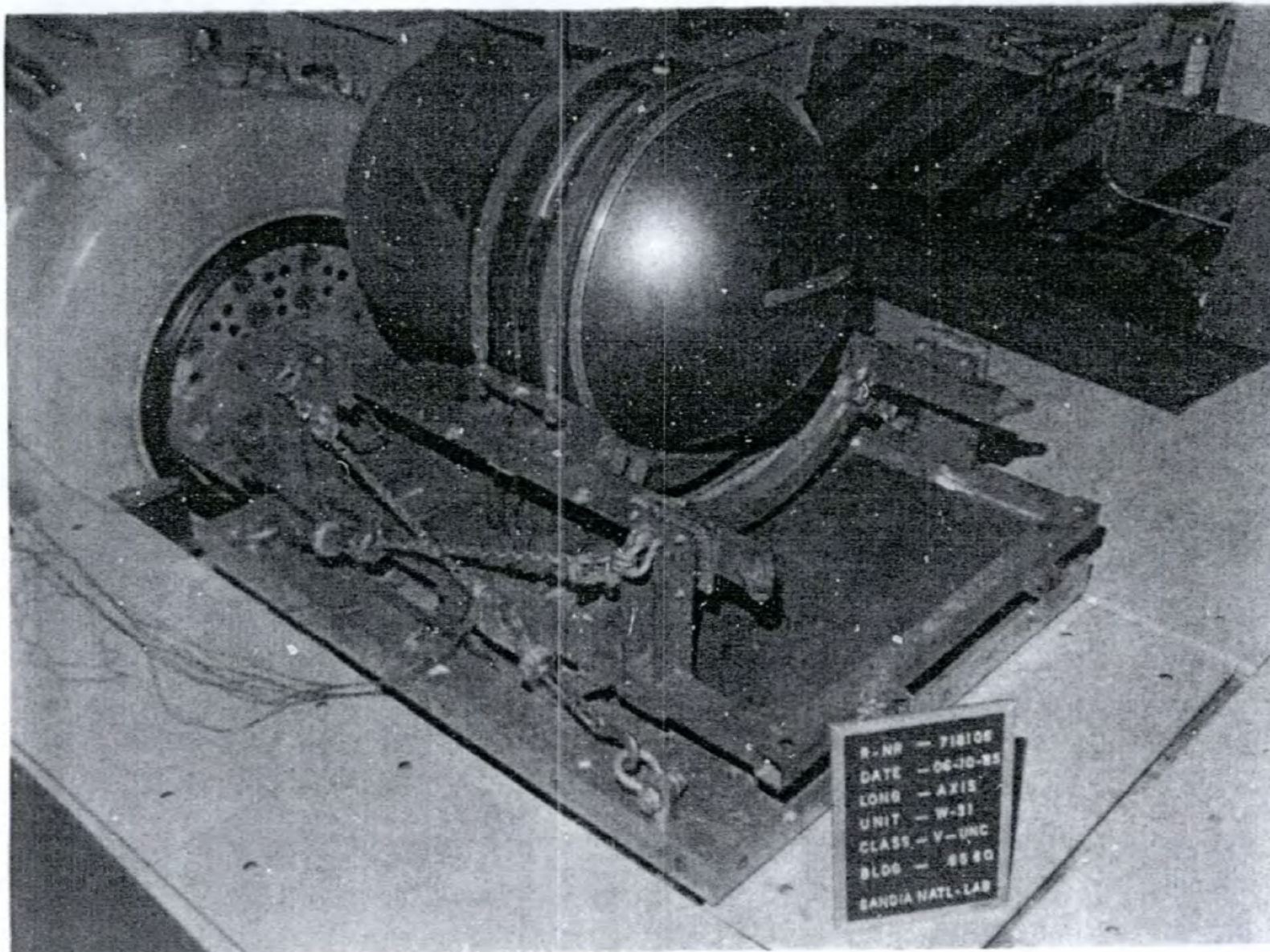


Figure 1 - Truck Vibration Longitudinal Setup

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C85-100,740
R718106
Unclassified

U01027

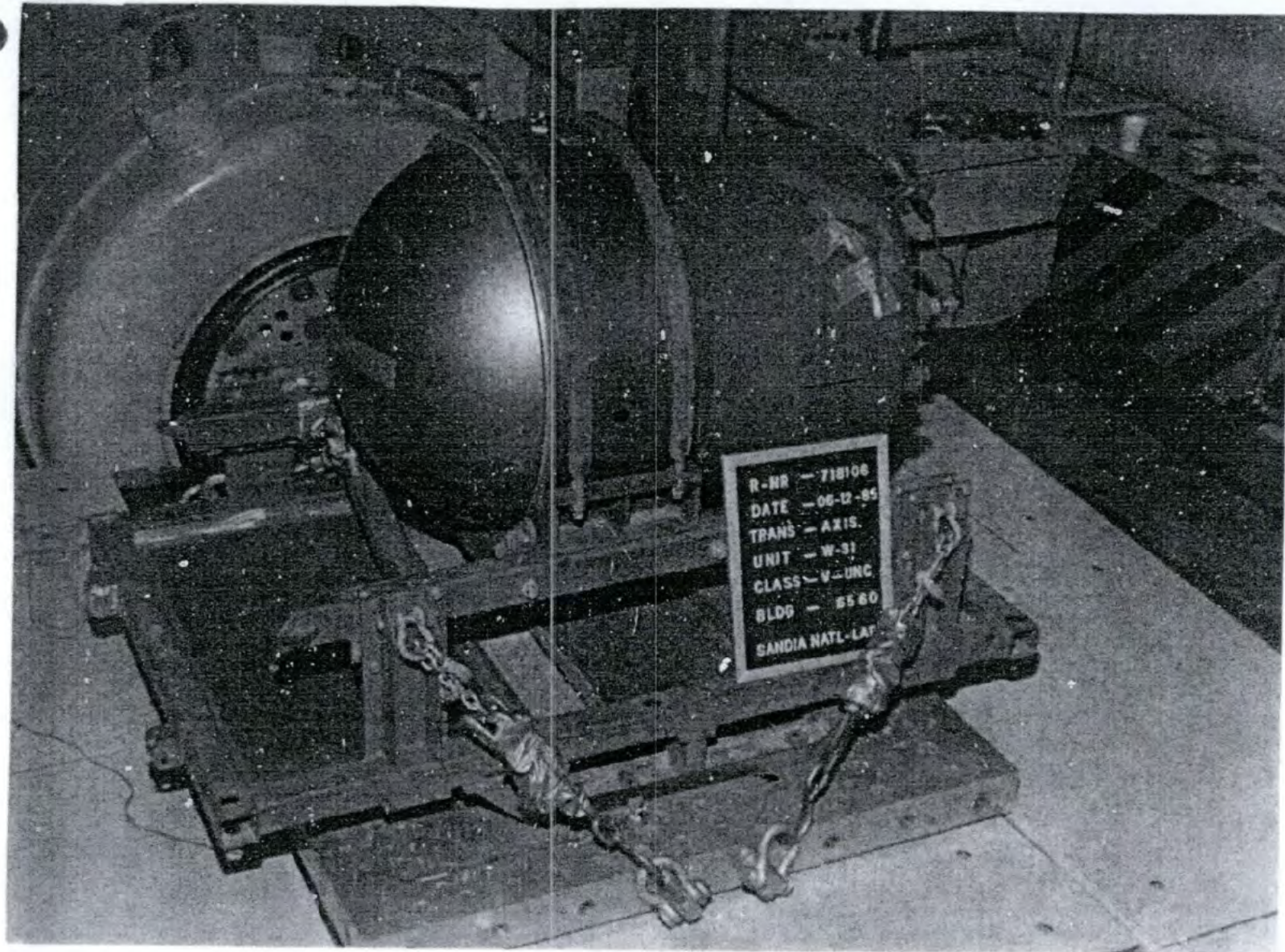


Figure 4 - Truck Vibration - Transverse Setup

C85-100,704
R718106
Unclassified

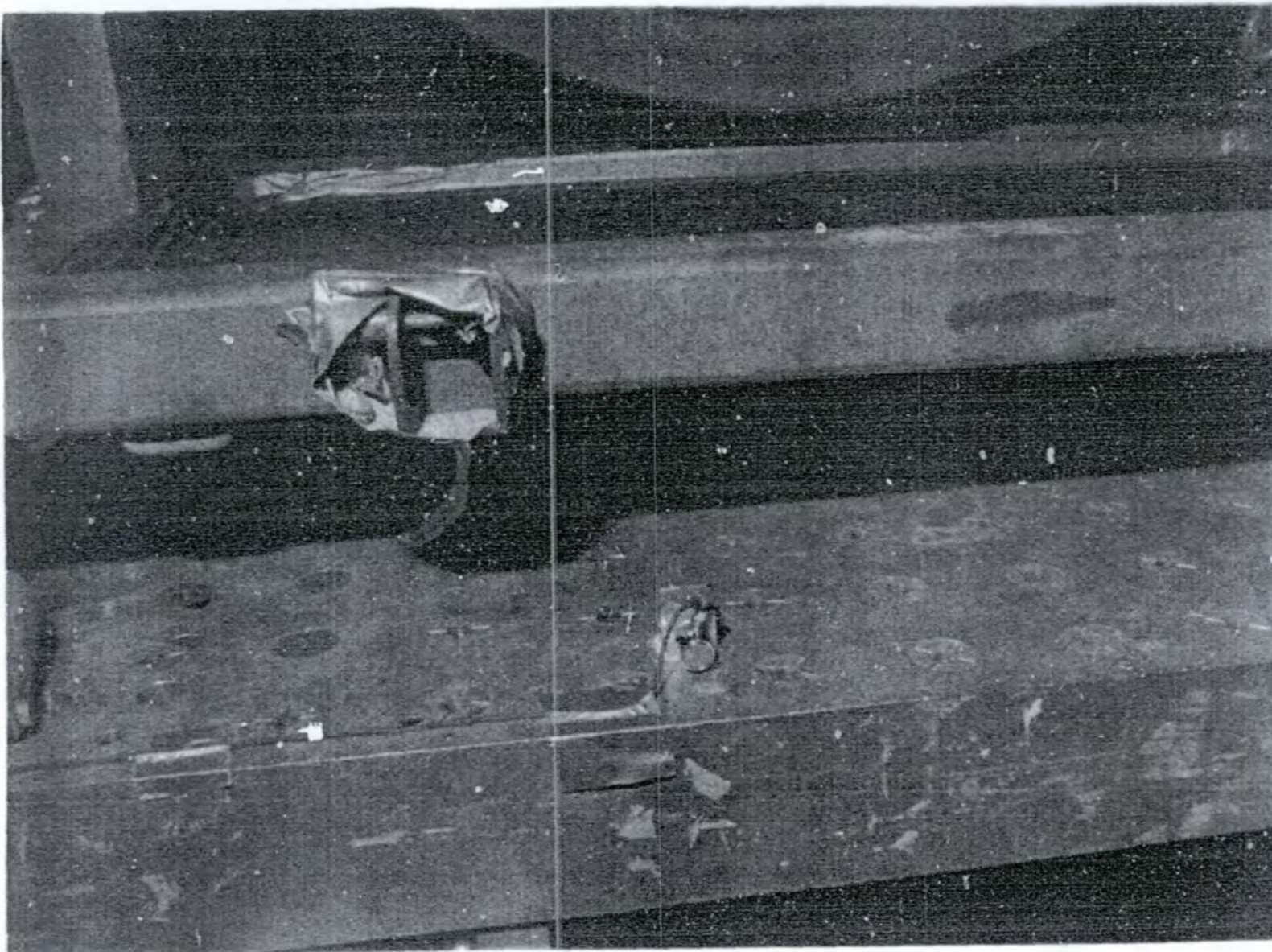
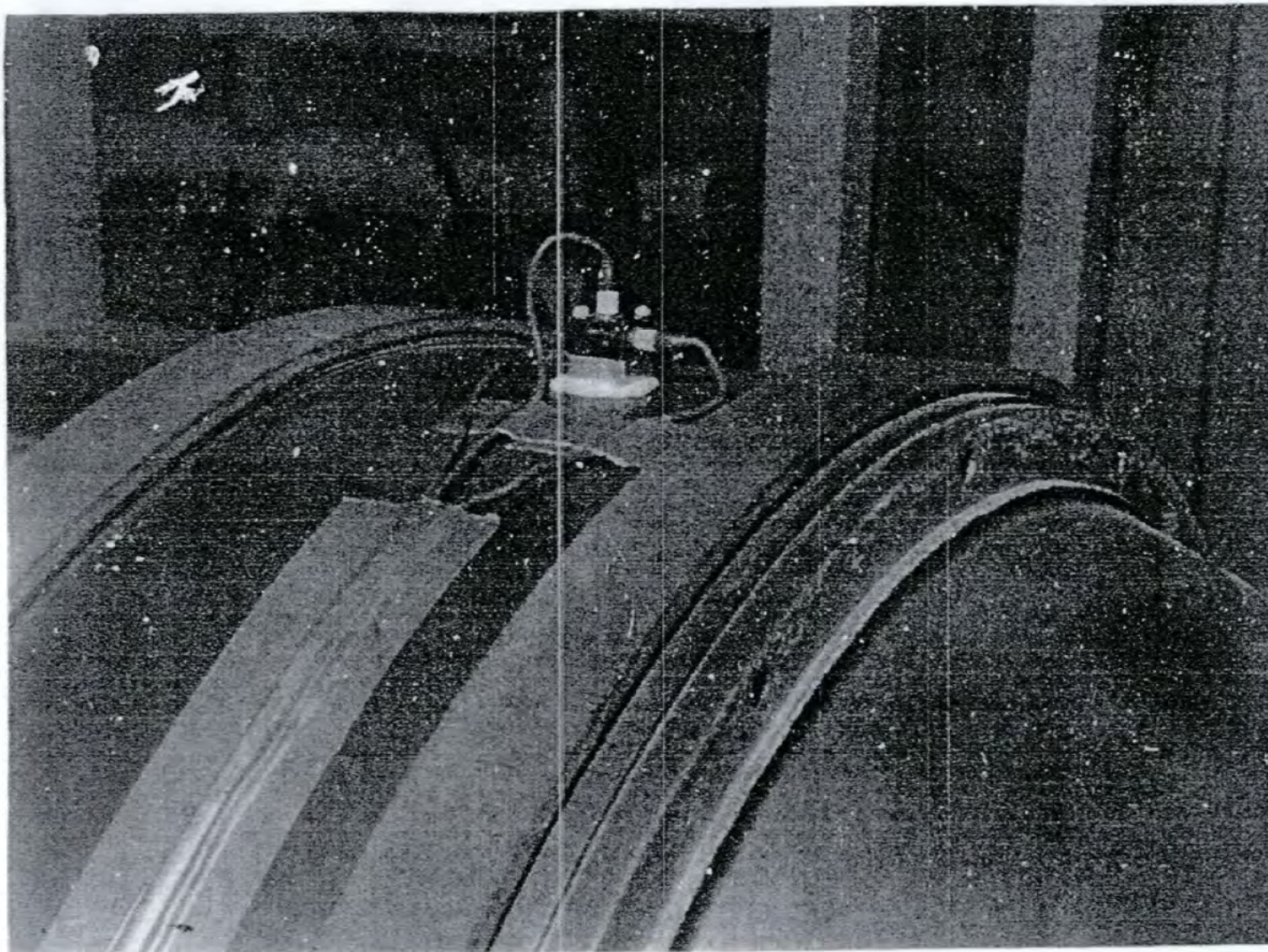


Figure 5 - Control Accelerometer for W51 Dolly Environments

C85-100,702
B710106
Unclassified



001029

Figure 6 - Accelerometer on Top of Tank for Vibration Measurements

CRS-100,
4718108
Unclassified

01030

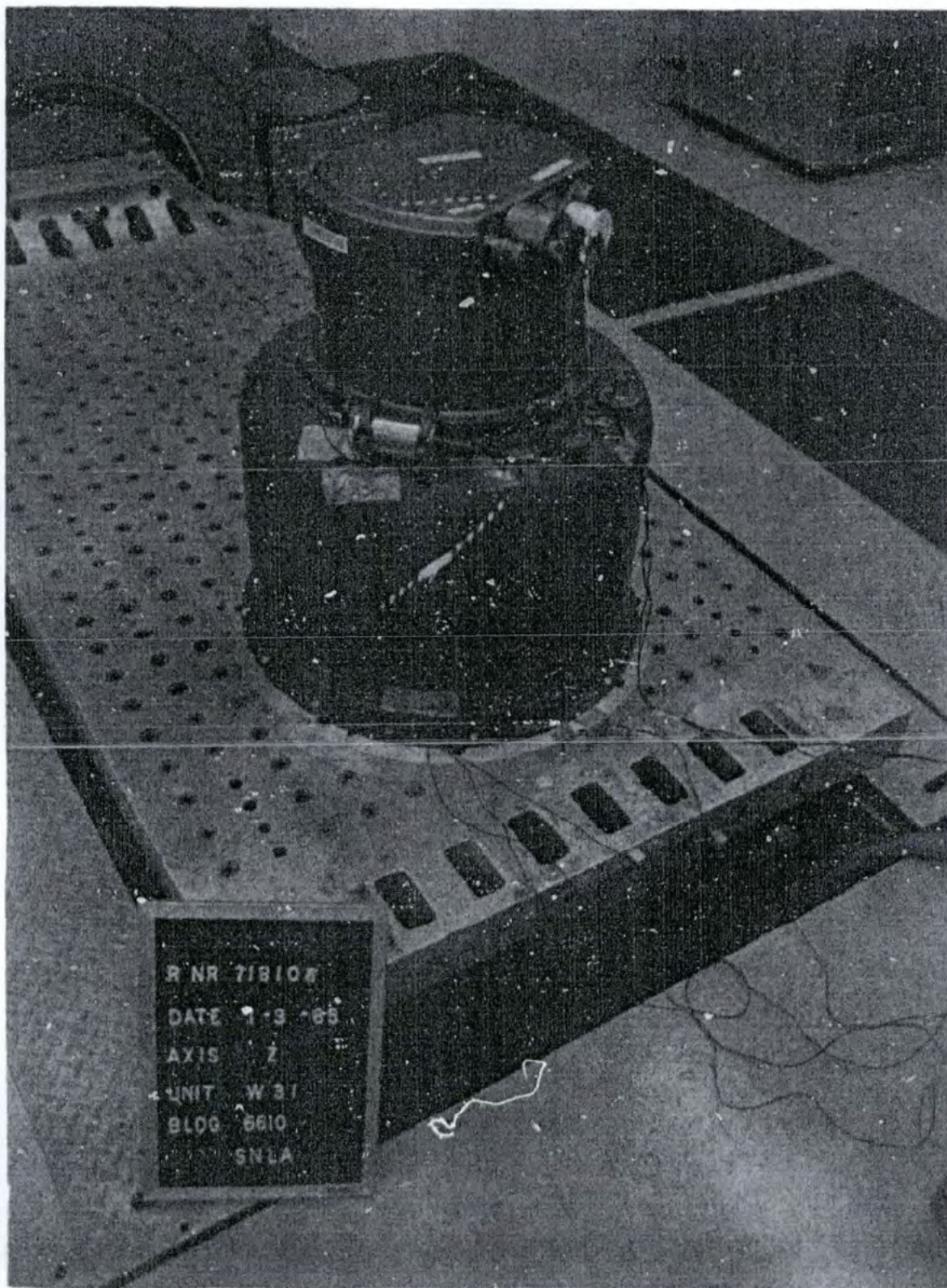


Figure C - Launch Vibration Test Setup

C85-100,703
R710106
Unclassified

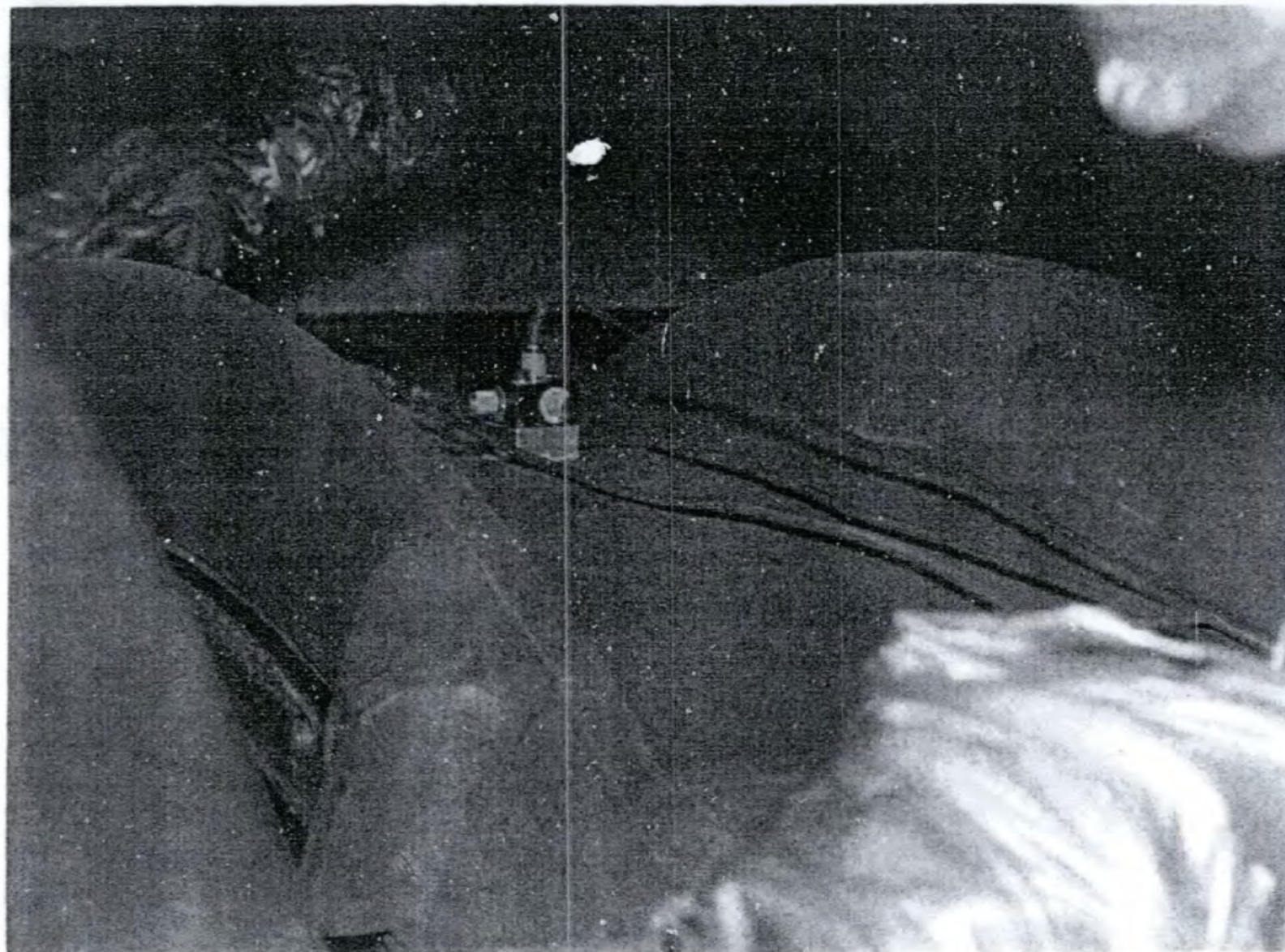


Figure 7 - Accelerometer on Bottom of unit for W31 Dolly Environments
(picture of the unit)

001031

SAMPLE RATE=2073.0 FILTER=400.0 * OF POINTS=4096.0

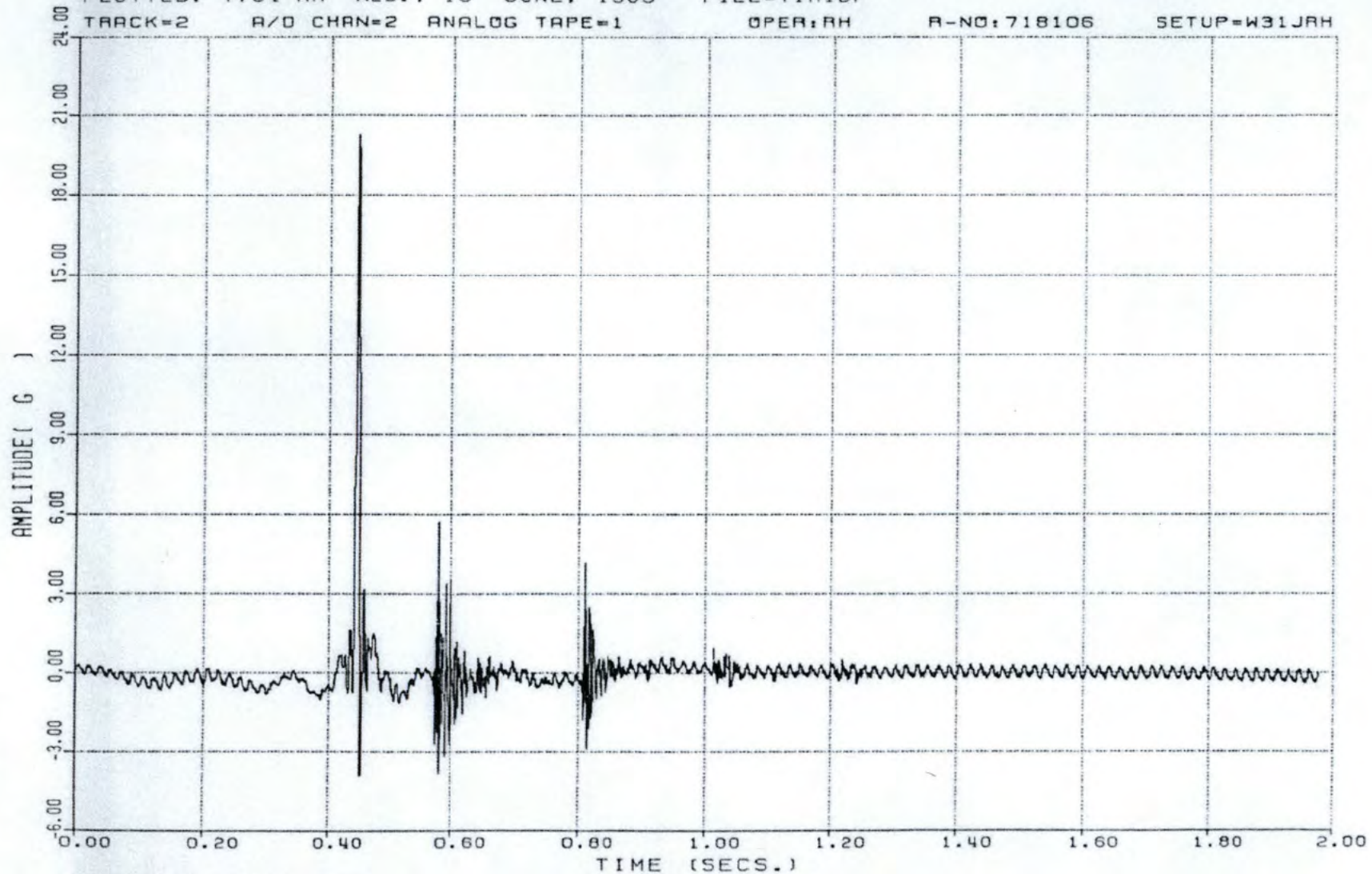
PLOTTED: 7:54 AM WED., 19 JUNE, 1985 FILE=TIMIBF

TRACK=2 A/D CHAN=2 ANALOG TAPE=1

OPER:RH

R-NO:718106

SETUP=W31JAH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1A

RUN DESC:FKLFT.TRANS.(U-LONG)

RUN AXIS:LONG.

TRANS:AI INPUT CONTROL (TABLE)

TRANS. AXIS:INAXIS

TEST DATE:06/07/85

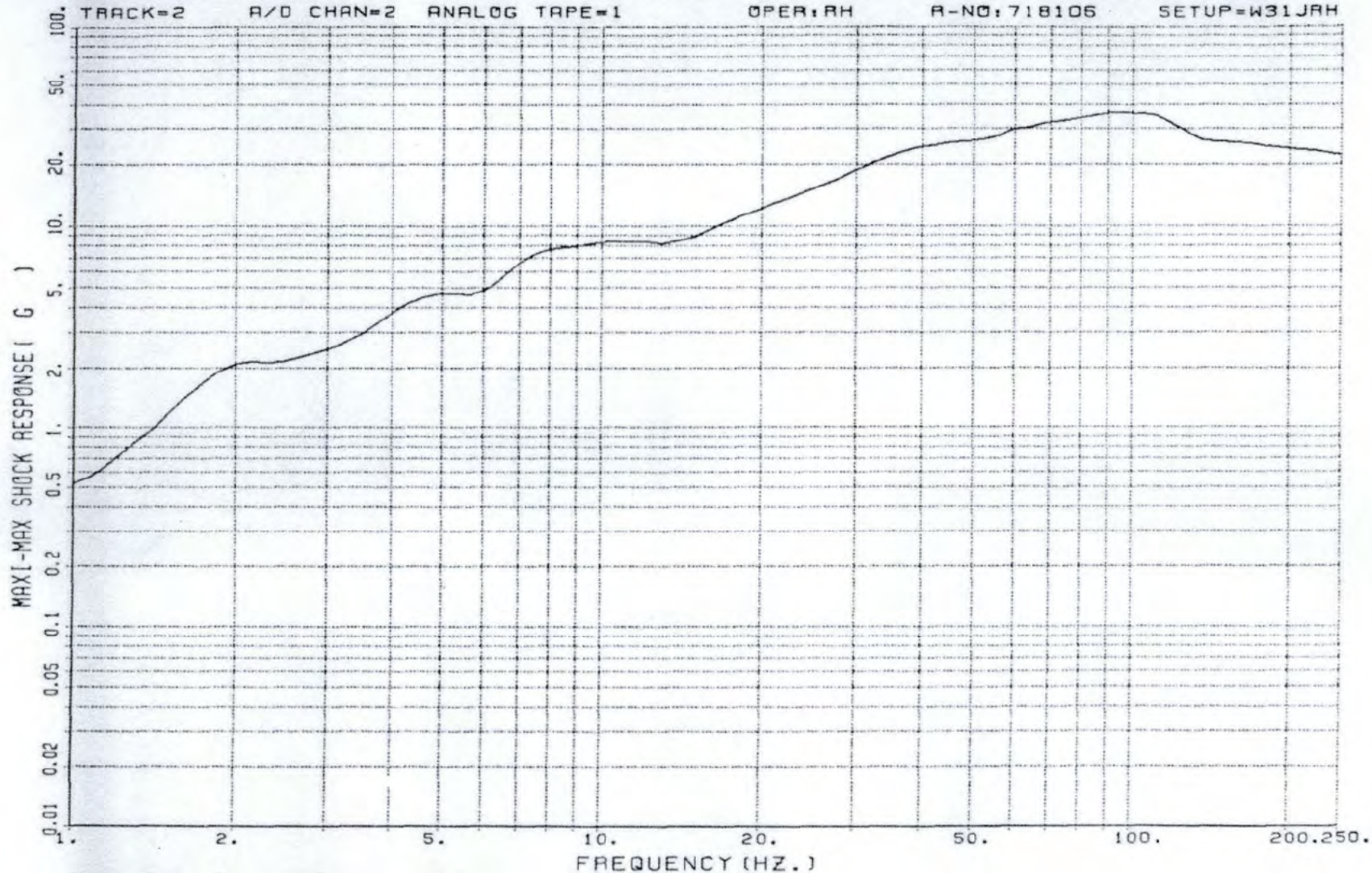
TEST DURATION:<1SEC. TEST TEMP:ROOM

FIGURE:9

SAMPLE RATE=2073.0 DAMPING=0.030 FILTER=400.0

OF POINTS=/ OCTAVE =10 PLOTTED: 7:58 AM WED.. 19 JUNE, 1985 FILE=SHAM02

TRACK=2 A/D CHAN=2 ANALOG TAPE=1 OPER:RH R-NO:718106 SETUP=W31JRH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1A

RUN DESC:FKLFT.TRANS. (U-LONG)

RUN AXIS:LONG.

TRANS:AI INPUT CONTROL (TABLE)

TRANS. AXIS:INAXIS

TEST DATE:06/07/85

TEST DURATION:<1SEC. TEST TEMP:ROOM

FIGURE:

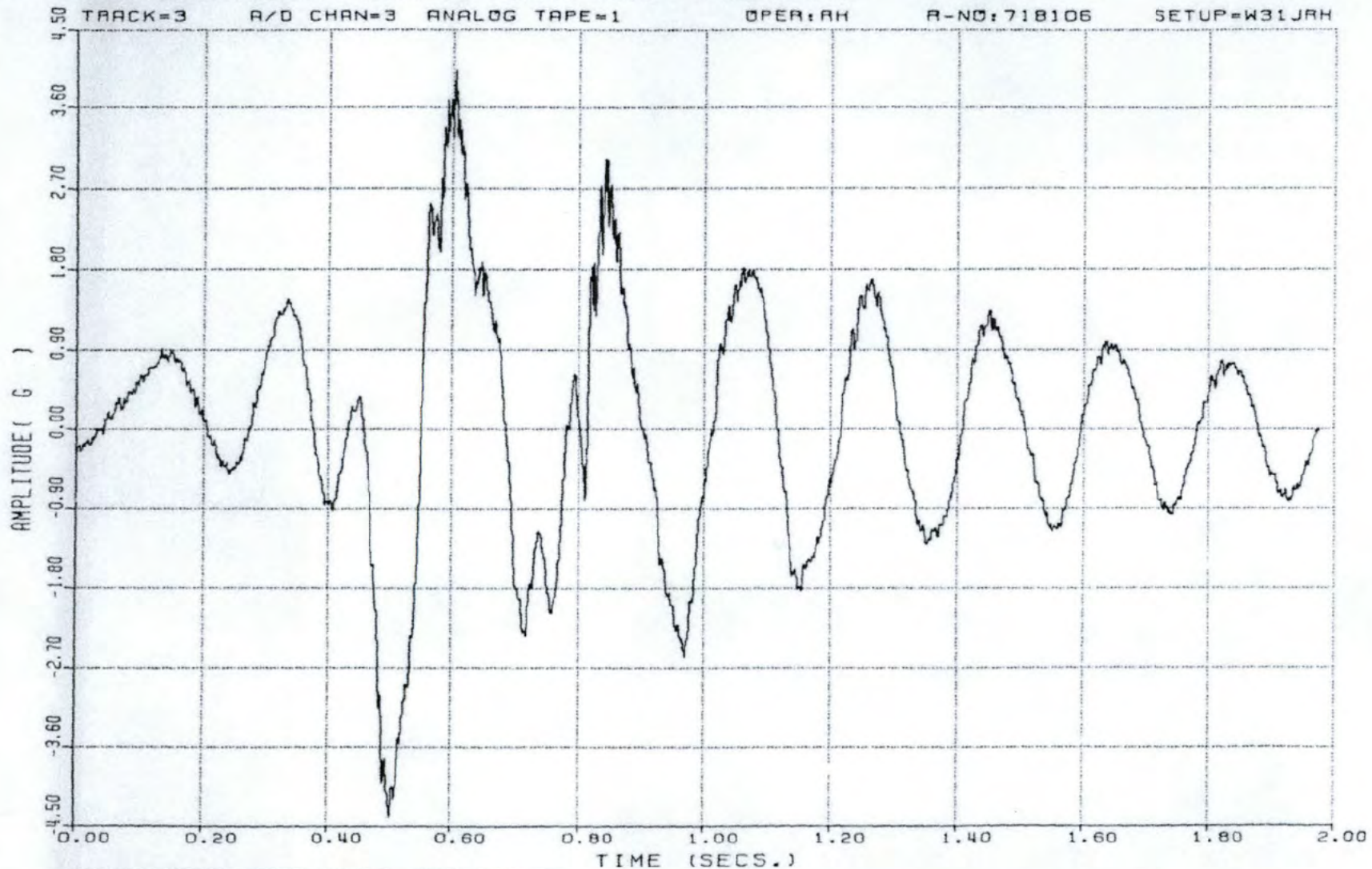
10

001033

SAMPLE RATE=2073.0 FILTER=400.00 * OF POINTS=4096.0

PLOTTED: 7:54 AM WED.. 19 JUNE, 1985 FILE=TIMIBF

TRACK=3 A/D CHAN=3 ANALOG TAPE=1 OPER:RH R-NO:718106 SETUP=W31JRH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1A

RUN DESC:FKLFT.TRANS. (U-LONG)

RUN AXIS:LONG.

TRANS:A1 RESP. (TOP OF UNIT)

TRANS. AXIS:LONG.

TEST DATE:06/07/85

TEST DURATION:<1SEC. TEST TEMP:ROOM

FIGURE: 11

001034

SAMPLE RATE=2073.0 DAMPING=0.030 FILTER=400.0

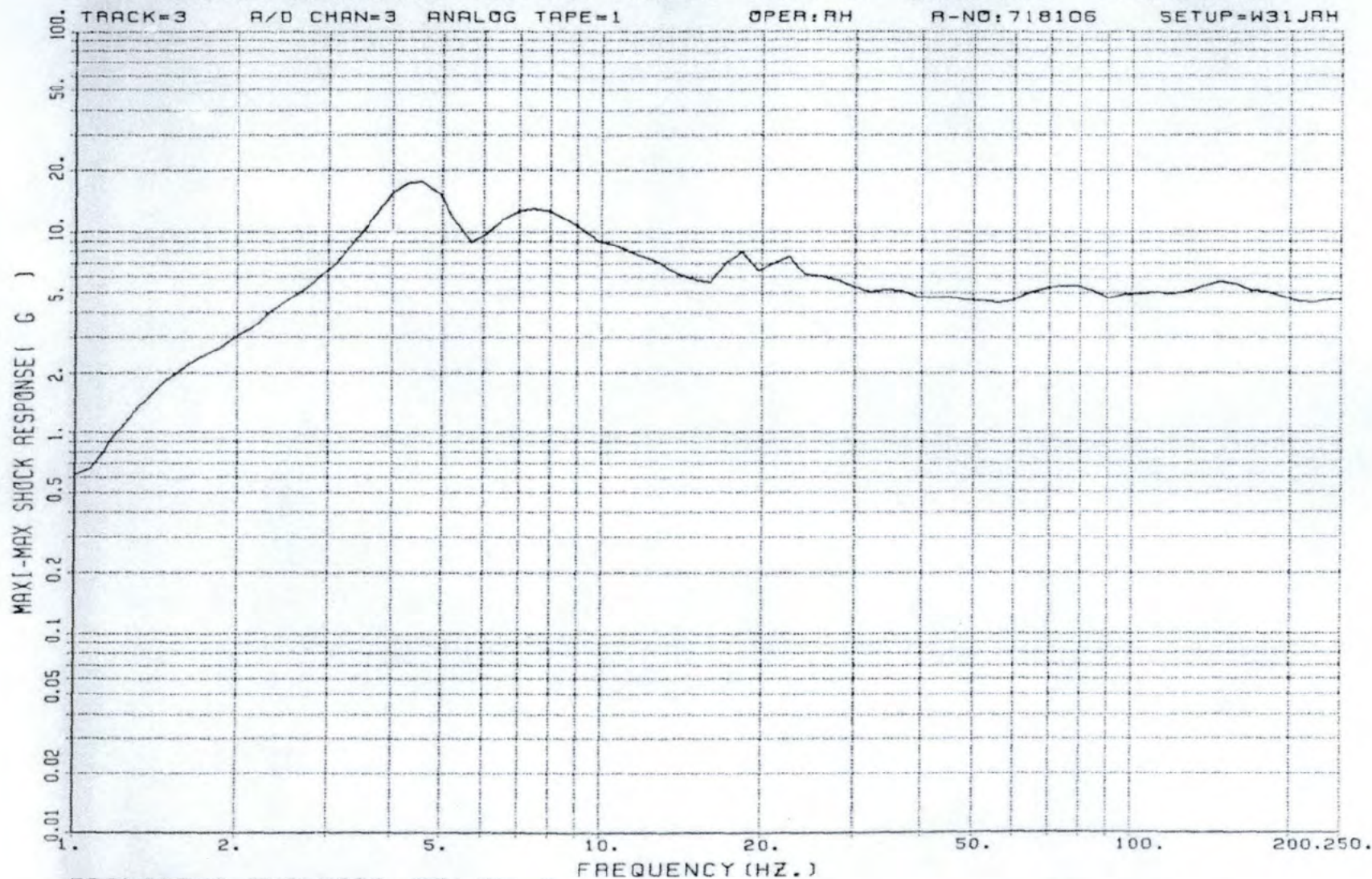
OF POINTS=/ OCTAVE =10 PLOTTED: 7:58 AM WED.. 19 JUNE, 1985 FILE=SHAM03

TRACK=3 A/D CHAN=3 ANALOG TAPE=1

OPER:RH

R-NO:718106

SETUP=W31JRH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1A

RUN DESC:FKLFT.TRANS. (U-LONG)

RUN AXIS:LONG.

TRANS:A1 RESP. (TOP OF UNIT)

TRANS. AXIS:LONG.

TEST DATE:06/07/85

TEST DURATION:<1SEC. TEST TEMP:ROOM

FIGURE:

12

001035

SAMPLE RATE=2073.0 FILTER=400.00 # OF POINTS=4096.0

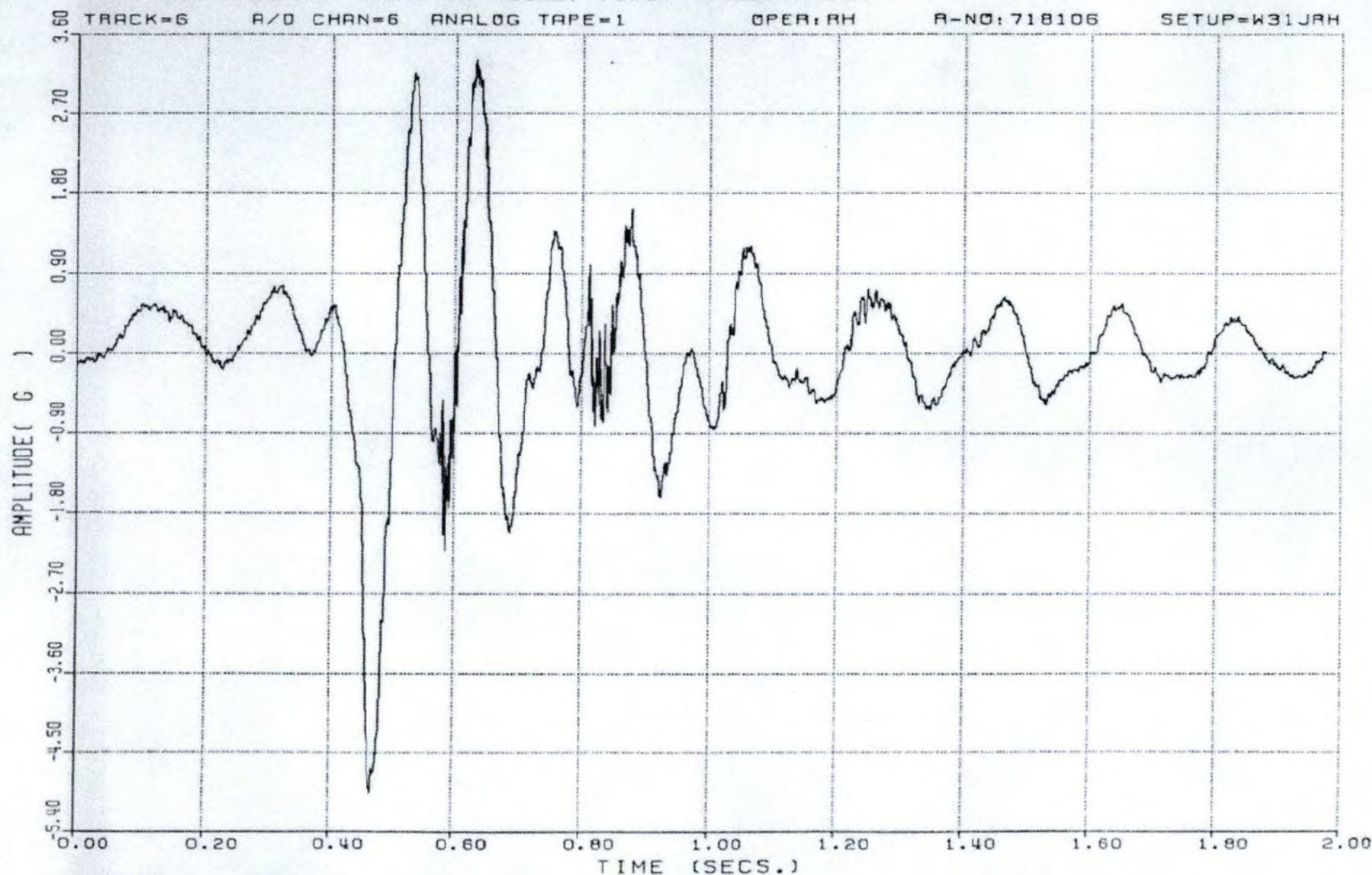
PLOTTED: 7:54 AM WED., 19 JUNE, 1985 FILE=TIMIBF

TRACK=6 A/D CHAN=6 ANALOG TAPE=1

OPER:RH

R-NQ:718106

SETUP=W31JRH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1A

RUN DESC:FKLFT.TRANS. (U-LONG)

RUN AXIS:LONG.

TRANS:A4 RESP. (BOTTOM OF UNIT)

TRANS. AXIS:LONG.

TEST DATE:06/07/85

TEST DURATION:<1SEC. TEST TEMP:ROOM

FIGURE:

13

SAMPLE RATE=2073.0 DAMPING=0.030 FILTER=400.0

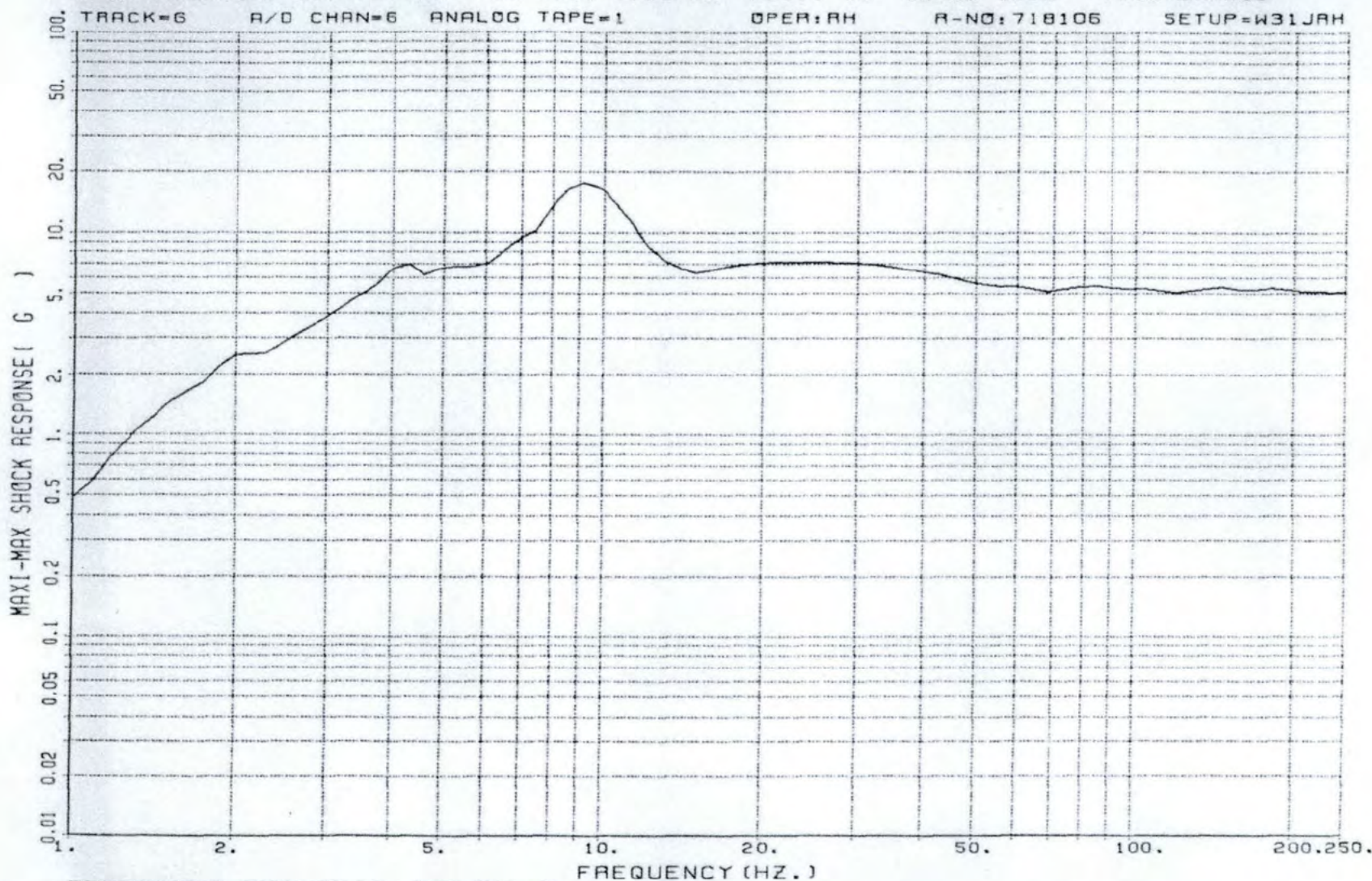
OF POINTS=/ OCTAVE =10 PLOTTED: 7:58 AM WED.. 19 JUNE. 1985 FILE=SHAM06

TRACK=6 A/D CHAN=6 ANALOG TAPE=1

OPER:RH

R-NO:718106

SETUP=W31JAH



TRANSIENT ANALYSIS: W31/Y1-3

RUN INDEX:1 RUN NO:1A

RUN DESC:FKLFT.TRANS. (U-LONG)

RUN AXIS:LONG.

TRANS:A4 RESP.(BOTTOM OF UNIT)

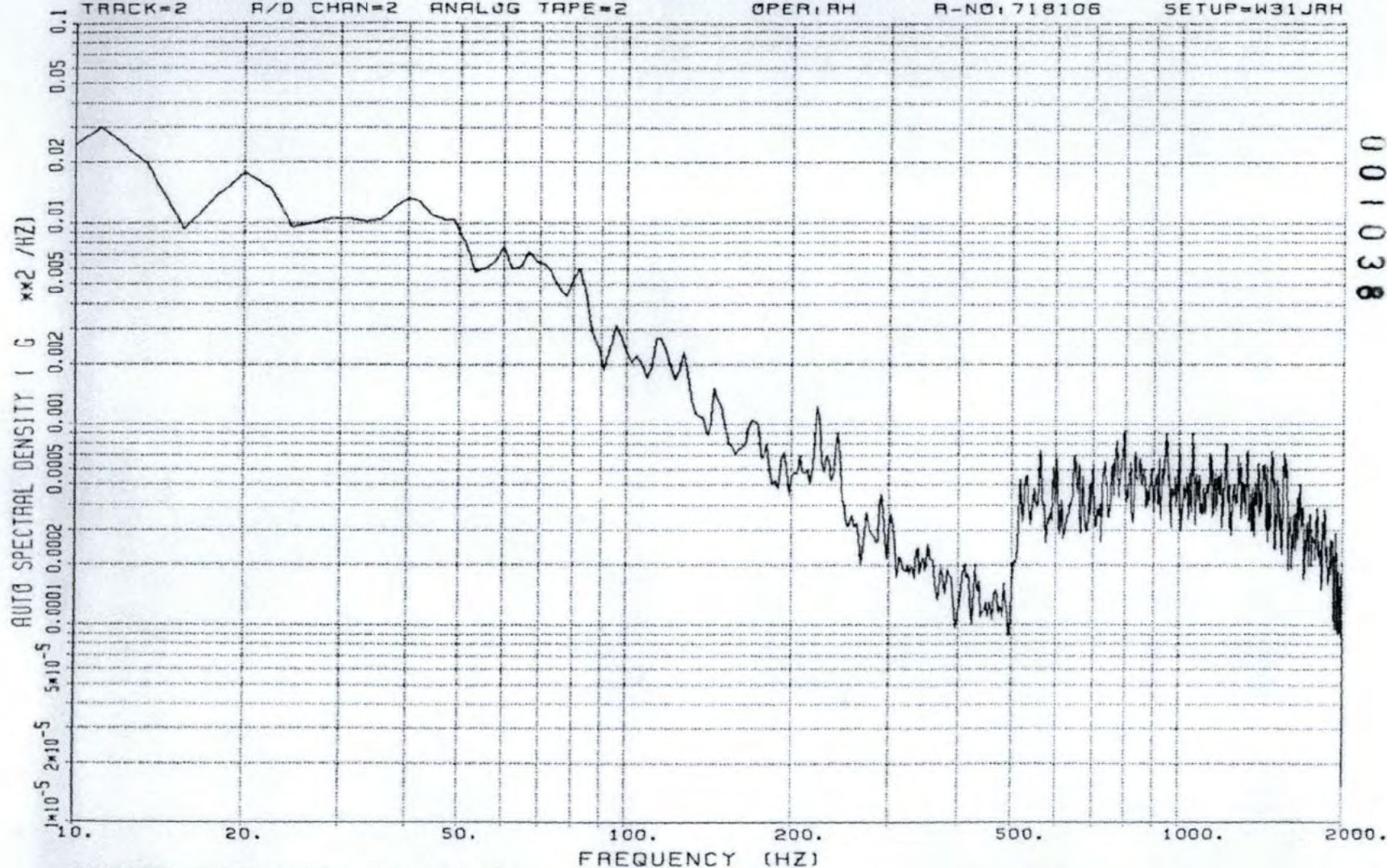
TRANS. AXIS:LONG.

TEST DATE:06/07/85

TEST DURATION:<1SEC. TEST TEMP:ROOM

FIGURE: 14

ENBW=4.002 SE(X)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=1.287 PLOTTED:10:32 AM TUE., 18 JUNE, 1985 FILE=PSD102
 TRACK=2 A/D CHAN=2 ANALOG TAPE=2 OPER:AH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:3 RUN NO:2

RUN DESC:TRANSPN.RAND.TAK.

RUN AXIS:VERT.

TRANS:AI INPUT CONTROL (TABLE)

TRANS. AXIS:INAXIS

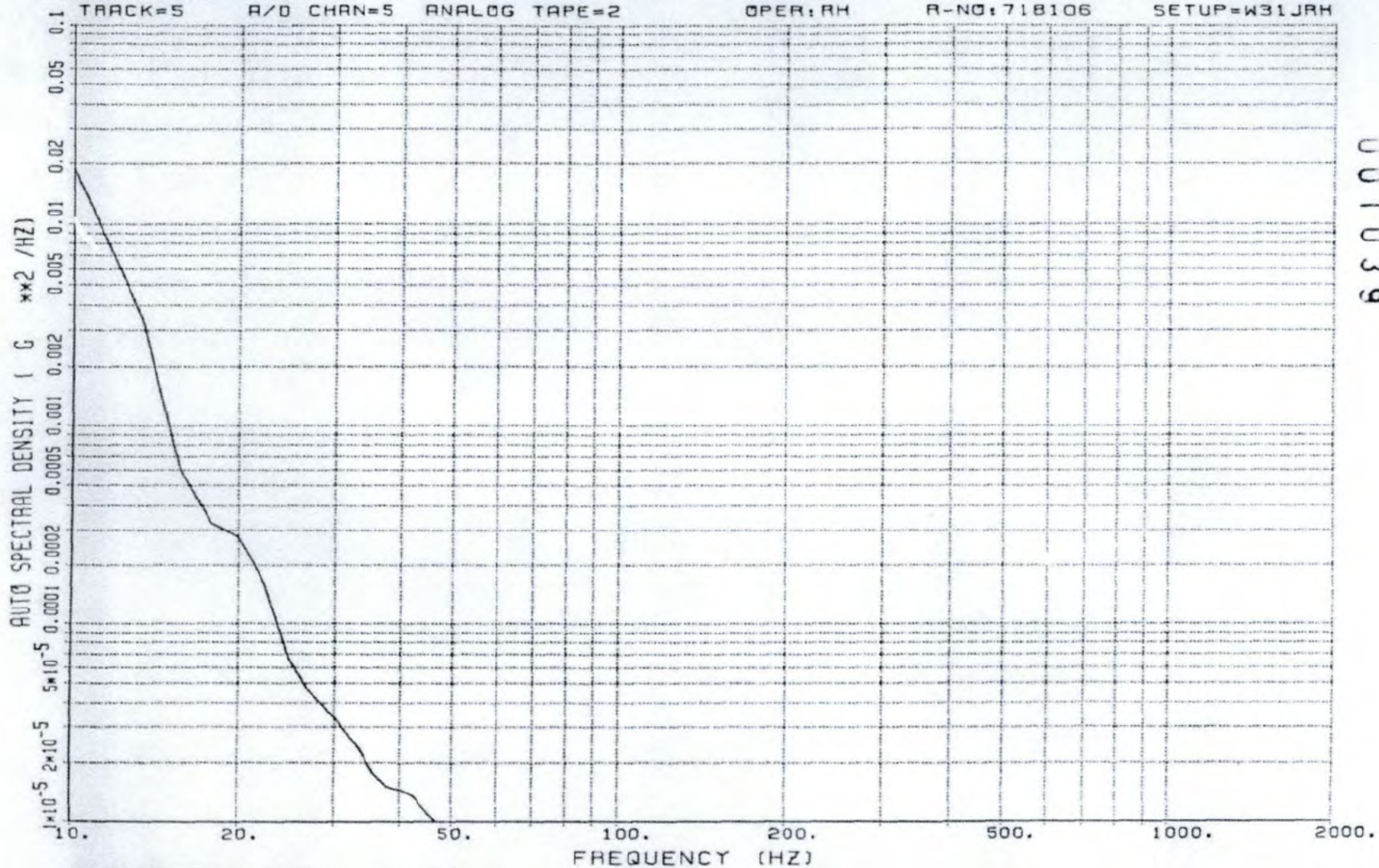
TEST DATE:06/10/85

TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 15

ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=0.562 PLOTTED:10:32 AM TUE., 18 JUNE, 1985 FILE=PSDI05
 TRACK=5 A/D CHAN=5 ANALOG TAPE=2 OPER:RH R-NQ:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:3 RUN NO:2

RUN DESC:TRANSPN.RAND.TRK.

RUN AXIS:VERT.

TRANS:A3 RESP.(TOP OF UNIT)

TRANS. AXIS:VERT.

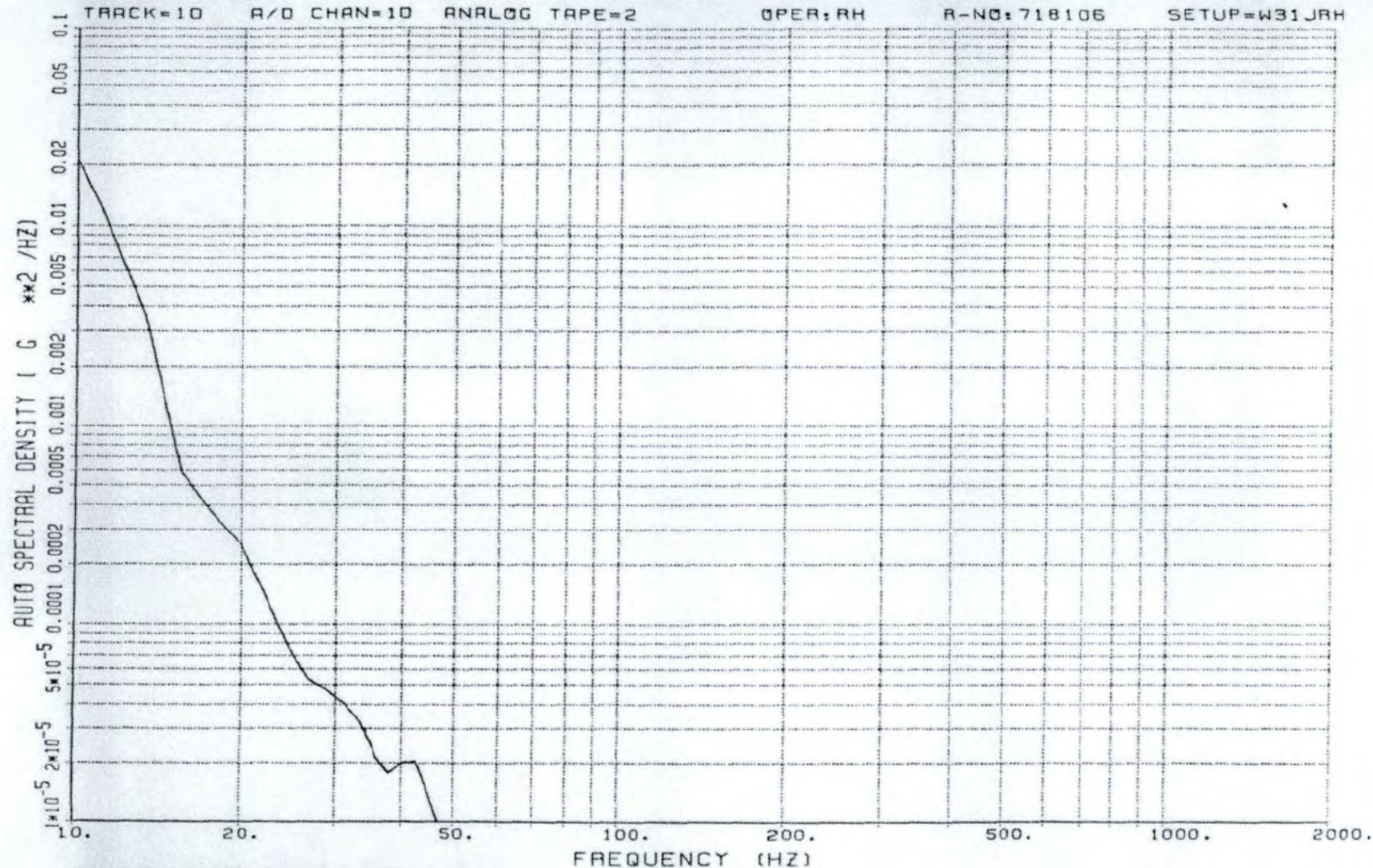
TEST DATE:06/10/85

TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 16

ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=0.582 PLOTTED:10:32 AM TUE.. 18 JUNE. 1985 FILE=P50I10
 TRACK=10 A/D CHAN=10 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:3 RUN NO:2

RUN DESC:TRANSPTN.RAND.TAK.

RUN AXIS:VERT.

TRANS:R6 RESP.(BOTTOM OF UNIT)

TRANS. AXIS:VERT.

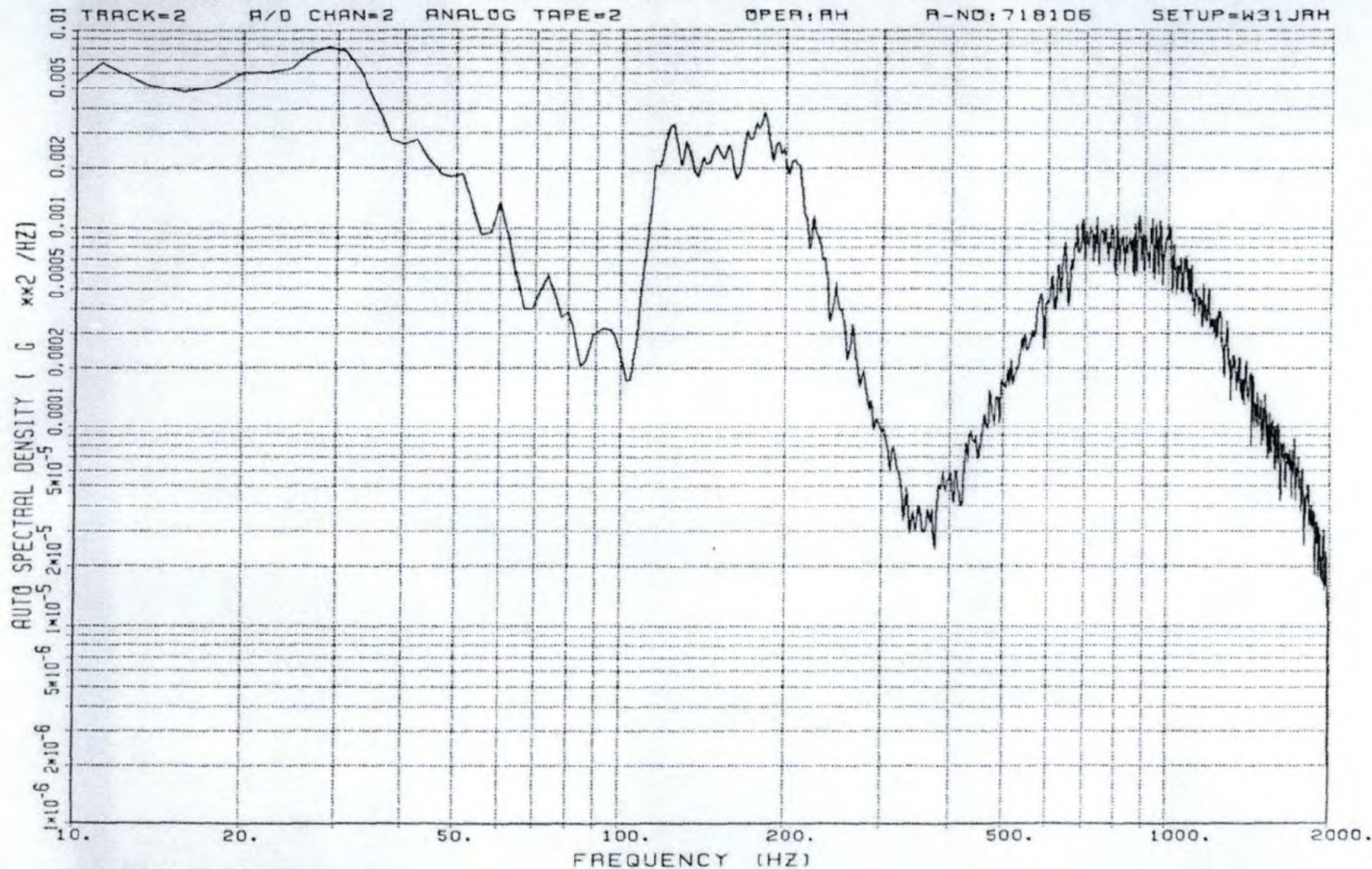
TEST DATE:06/10/85

TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 17

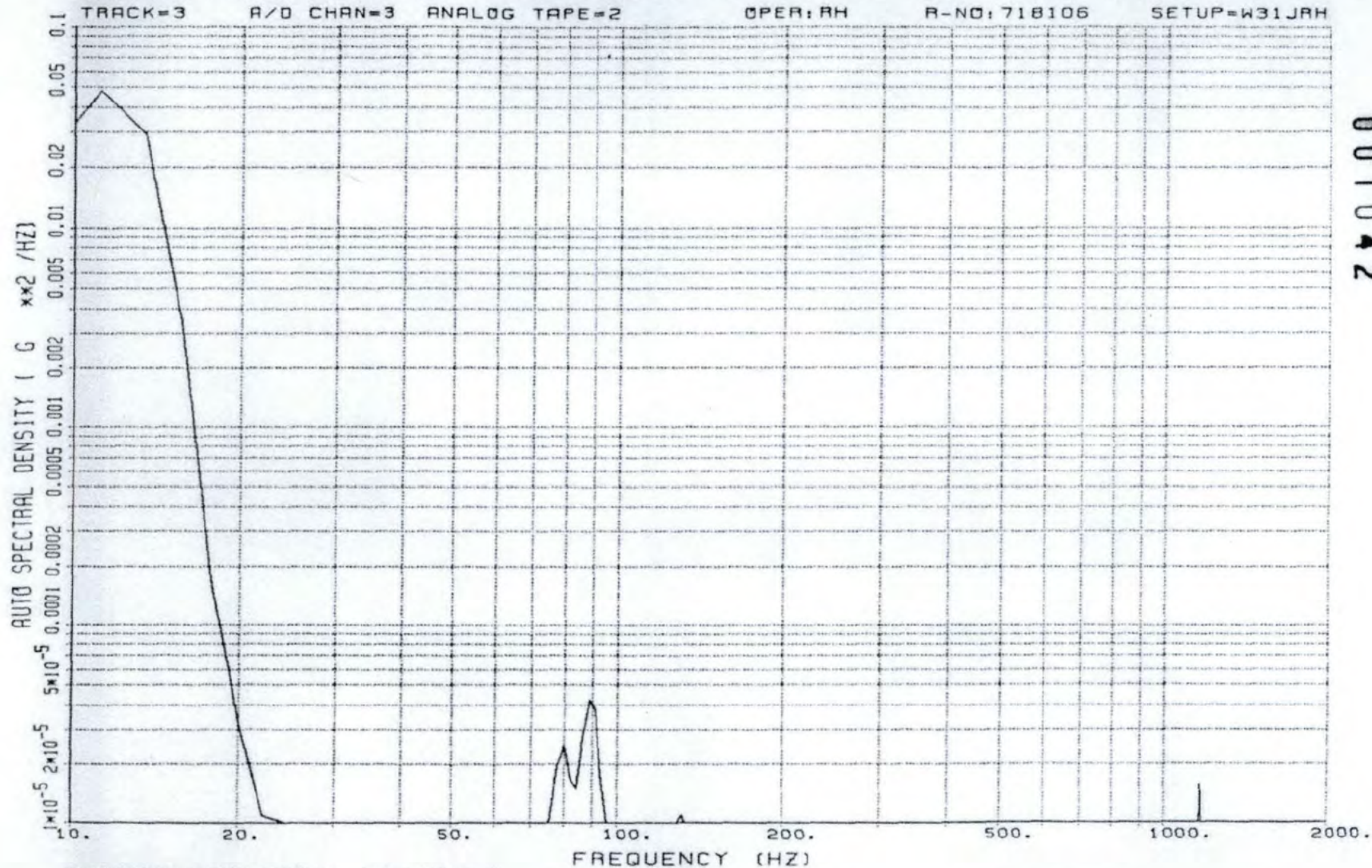
ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=1.040 PLOTTED:11:12 AM TUE., 18 JUNE, 1985 FILE=PSDJ02
 TRACK=2 A/D CHAN=2 ANALOG TAPE=2 OPER:AH A-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3
 RUN INDEX:4 RUN NO:3 RUN DESC:TRANSPN.RAND.TAK. RUN AXIS:LONG.
 TRANS:AI INPUT CONTROL (TABLE) TRANS. AXIS:INAXIS TEST DATE:06/11/85
 TEST DURATION:3HR. TEST TEMP:ROOM FIGURE: 18

001041

ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=0.481 PLOTTED:11:12 AM TUE., 18 JUNE, 1985 FILE=PSDJ03
 TRACK=3 A/D CHAN=3 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:4 RUN NO:3

RUN DESC:TRANSPN.RAND.TRK.

RUN AXIS:LONG.

TRANS:A1 RESP.(TOP OF UNIT)

TRANS. AXIS:LONG.

TEST DATE:06/11/85

TEST DURATION:3HR.

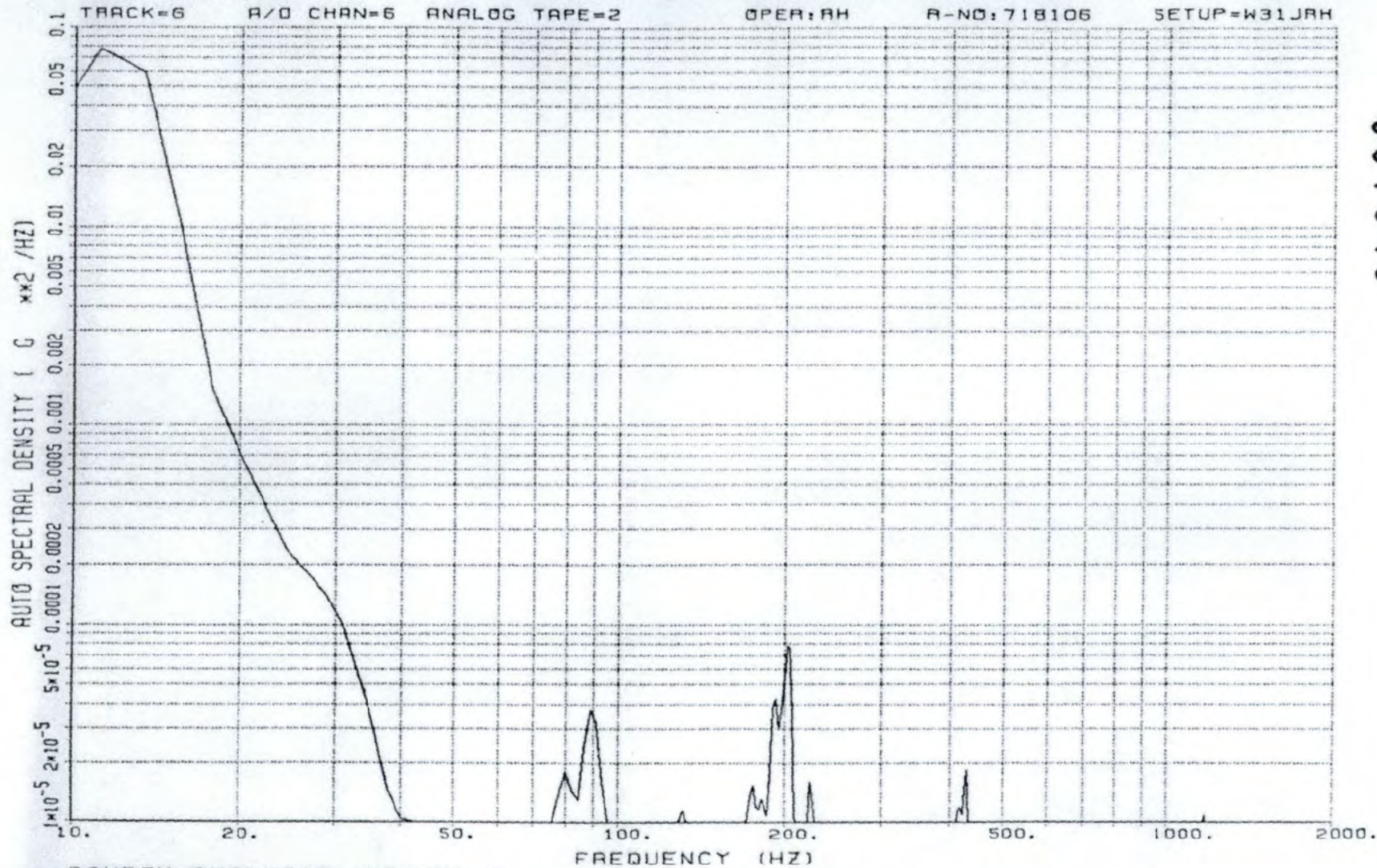
TEST TEMP:ROOM

FIGURE: 19

001042

ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=0.622 PLOTTED:11:12 AM TUE.. 18 JUNE. 1985 FILE=PSOJ06

TRACK=6 A/D CHAN=6 ANALOG TAPE=2 OPER:RH A-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:4 RUN NO:3

RUN DESC:TRANSPN.RAND.TAK.

RUN AXIS:LONG.

TRANS:A4 RESP.(BOTTOM OF UNIT)

TRANS. AXIS:LONG.

TEST DATE:06/11/85

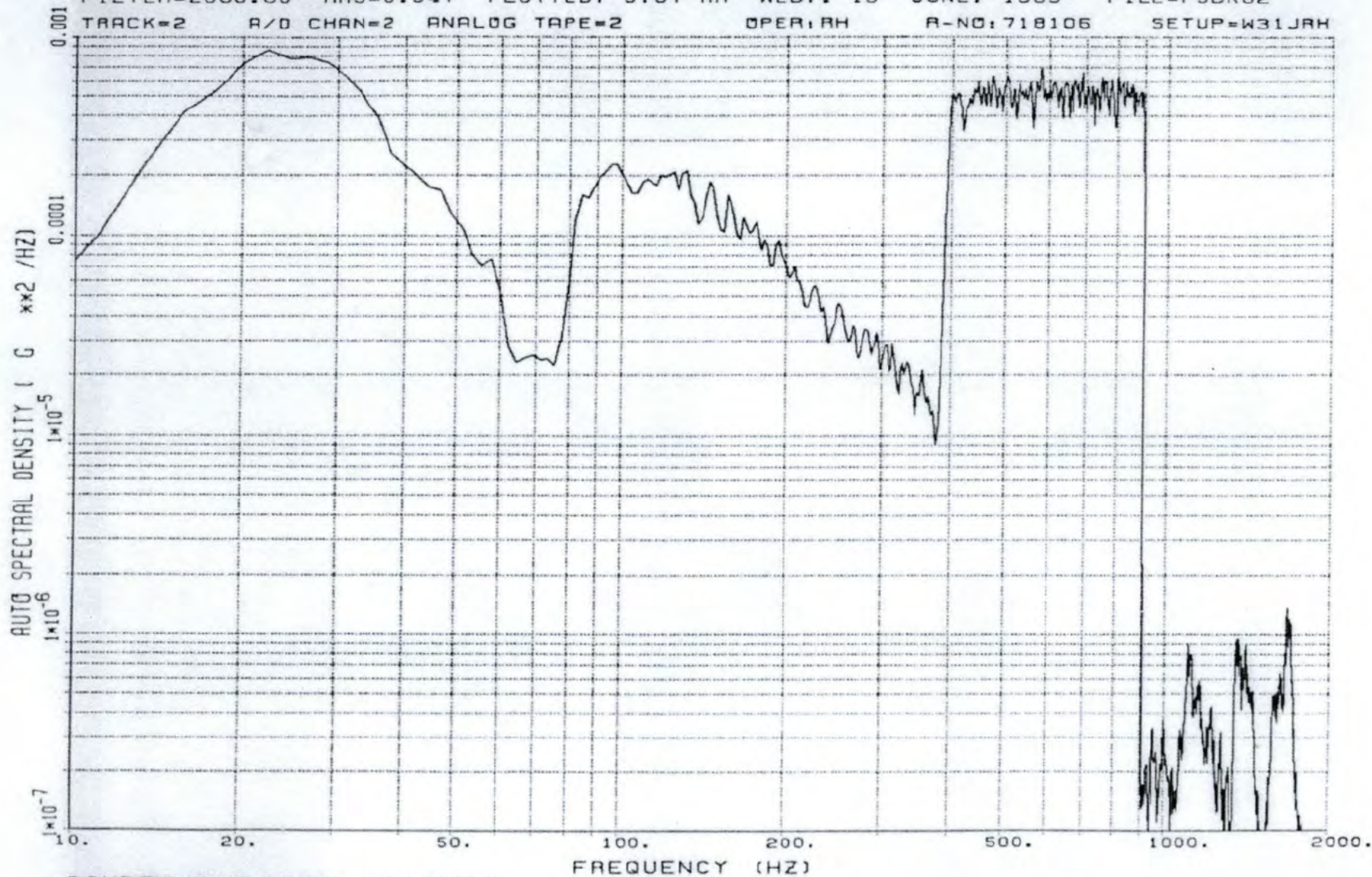
TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 20

001043

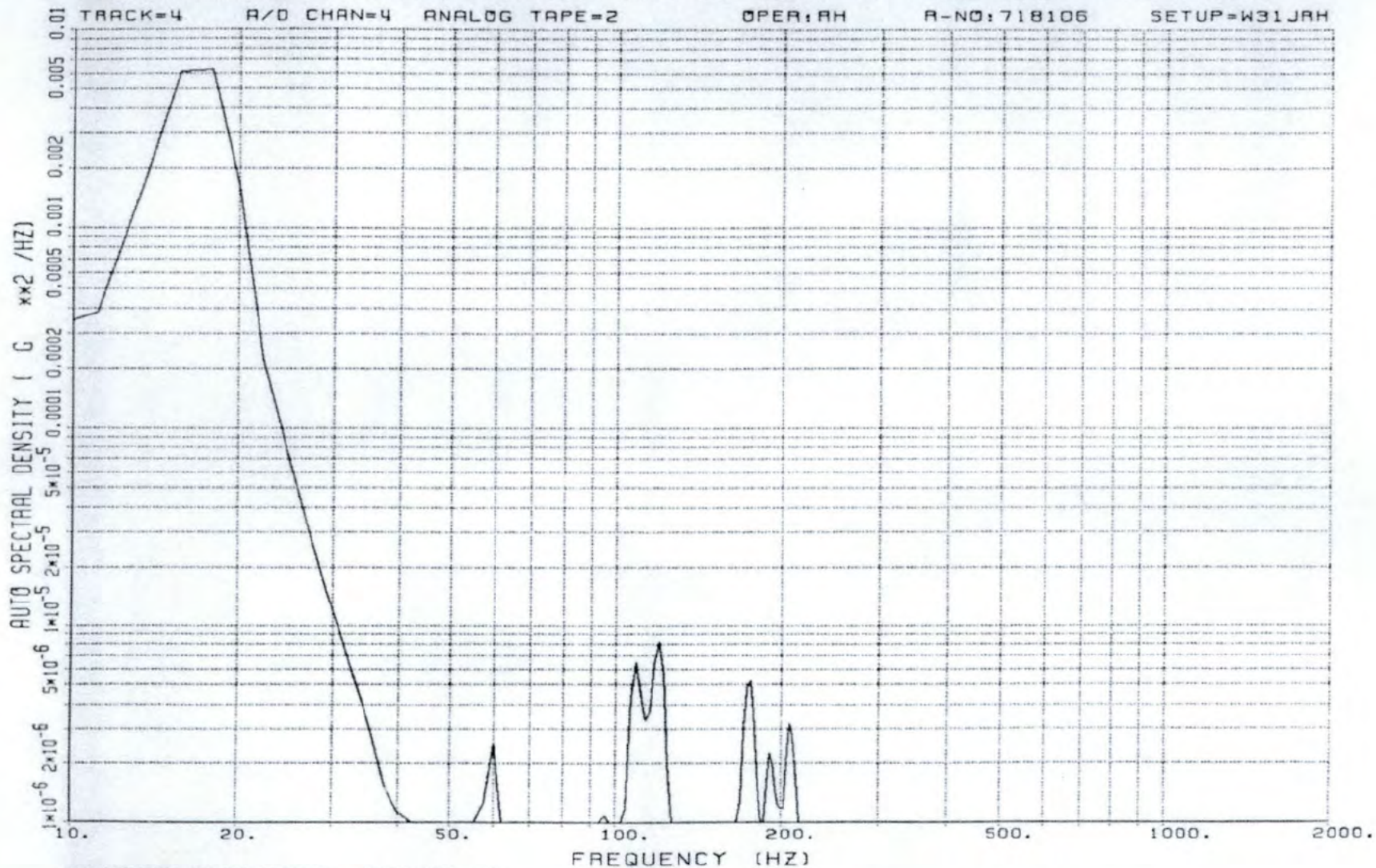
ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=0.547 PLOTTED: 9:07 AM WED.. 19 JUNE, 1985 FILE=PSDK02
 TRACK=2 A/D CHAN=2 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3
 RUN INDEX:5 RUN NO:4 RUN DESC:TRANSPN.RAND.TAK. RUN AXIS:LAT.
 TRANS:AI INPUT CONTROL (TABLE) TRANS. AXIS:INAXIS TEST DATE:06/12/85
 TEST DURATION:3HR. TEST TEMP:ROOM FIGURE: 21

001044

ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=0.194 PLOTTED: 9:07 AM WED.. 19 JUNE. 1985 FILE=PSDK04
 TRACK=4 A/D CHAN=4 ANALOG TAPE=2 OPER:AH A-NO:718106 SETUP=W31JAH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:5 RUN NO:4

RUN DESC:TRANSPN.RAND.TAK.

RUN AXIS:LAT.

TRANS:A2 RESP.(TOP OF UNIT)

TRANS. AXIS:LAT.

TEST DATE:06/12/85

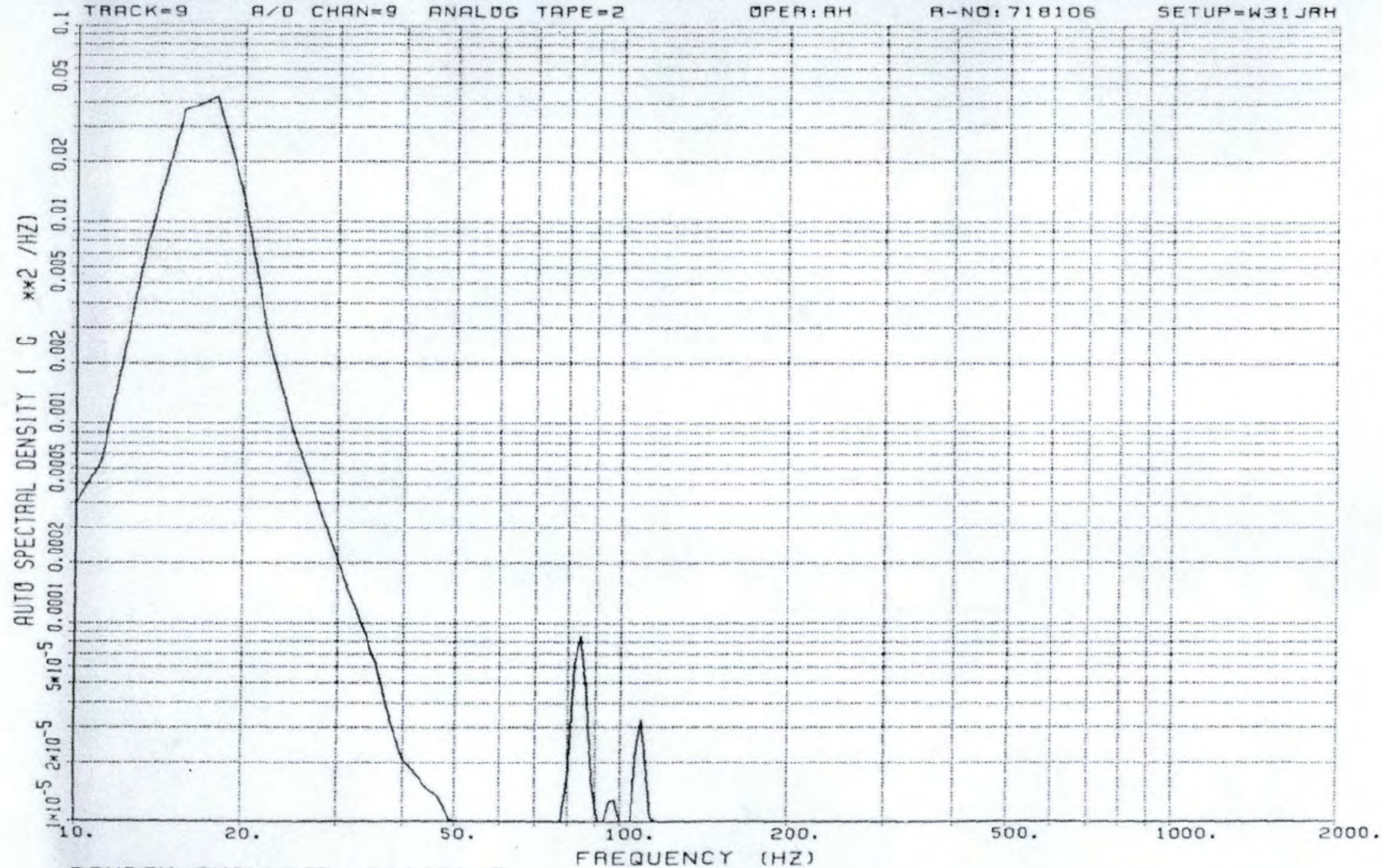
TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 22

001045

ENBW=4.002 SE(%)=15.0 WINDOW=KB SAMPLE RATE=9107.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=0.484 PLOTTED: 9:07 AM WED., 19 JUNE, 1985 FILE=PSOK09
 TRACK=9 A/D CHAN=9 ANALOG TAPE=2 OPER:RH R-NO:718106 SETUP=W31JRH



RANDOM ANALYSIS: W31/Y1-3

RUN INDEX:5 RUN NO:4

RUN DESC:TRANSPTN.RAND.TAK.

RUN AXIS:LAT.

TRANS:A5 RESP.(BOTTOM OF UNIT)

TRANS. AXIS:LAT.

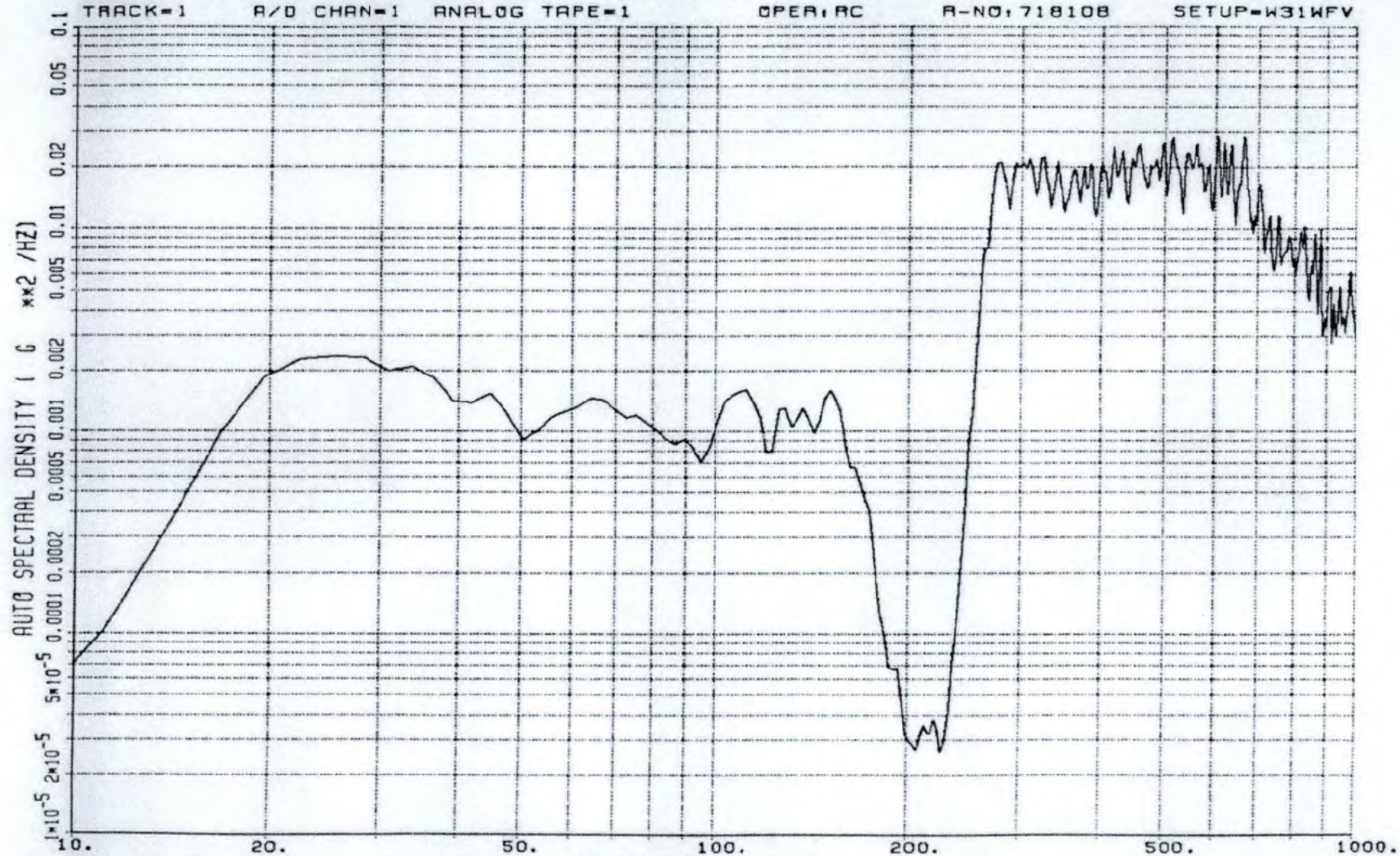
TEST DATE:06/12/85

TEST DURATION:3HR.

TEST TEMP:ROOM

FIGURE: 23

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=3.220 PLOTTED: 7:54 AM THU., 18 JULY, 1985 FILE=PSED01
 TRACK=1 A/D CHAN=1 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WV

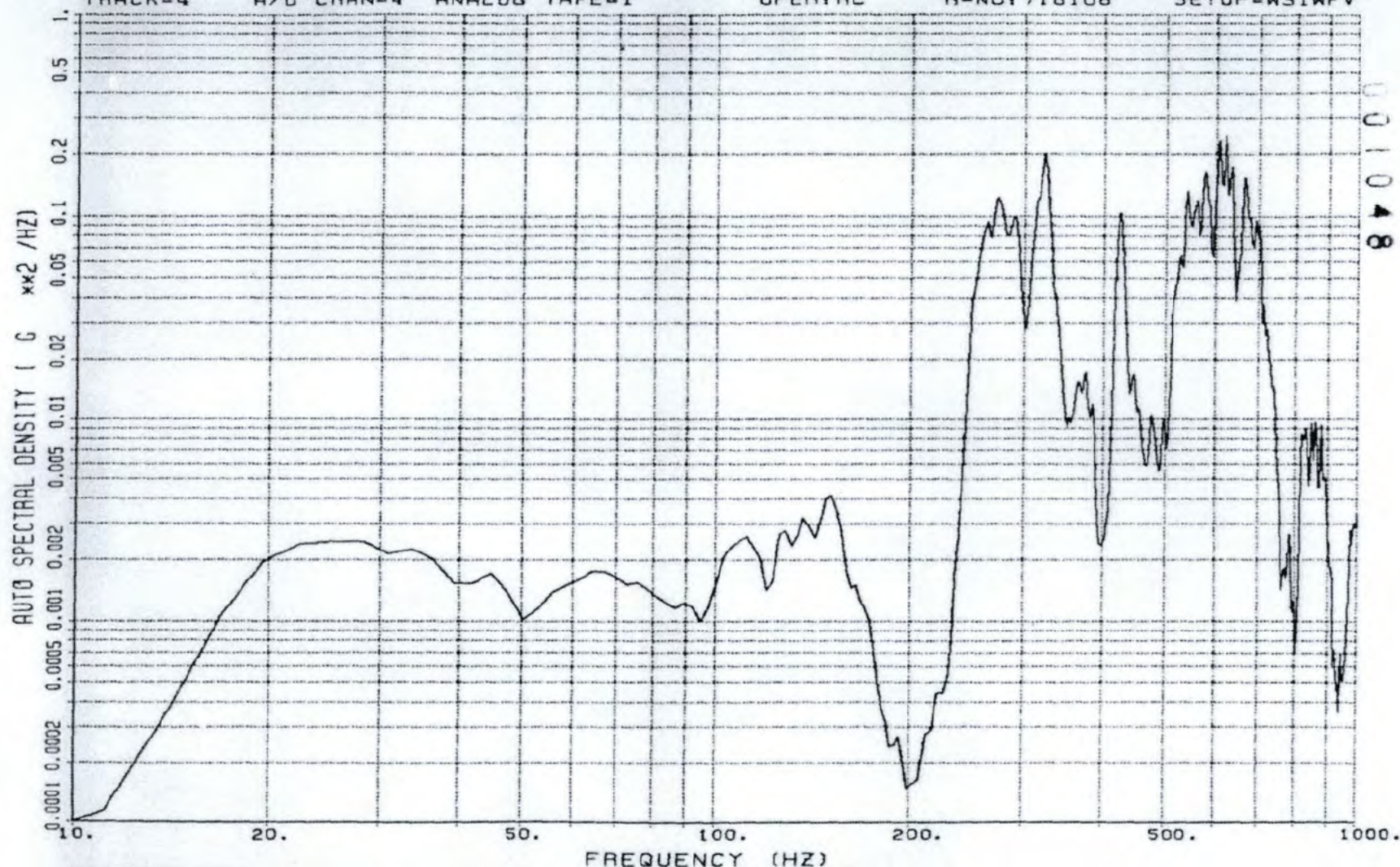


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:1 RUN NO:1 RUN DESC:TRANS. VIBRATION
 TRANS:A1-Z CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:Z
 TEST DATE:07/03/85
 FIGURE: 24

001047

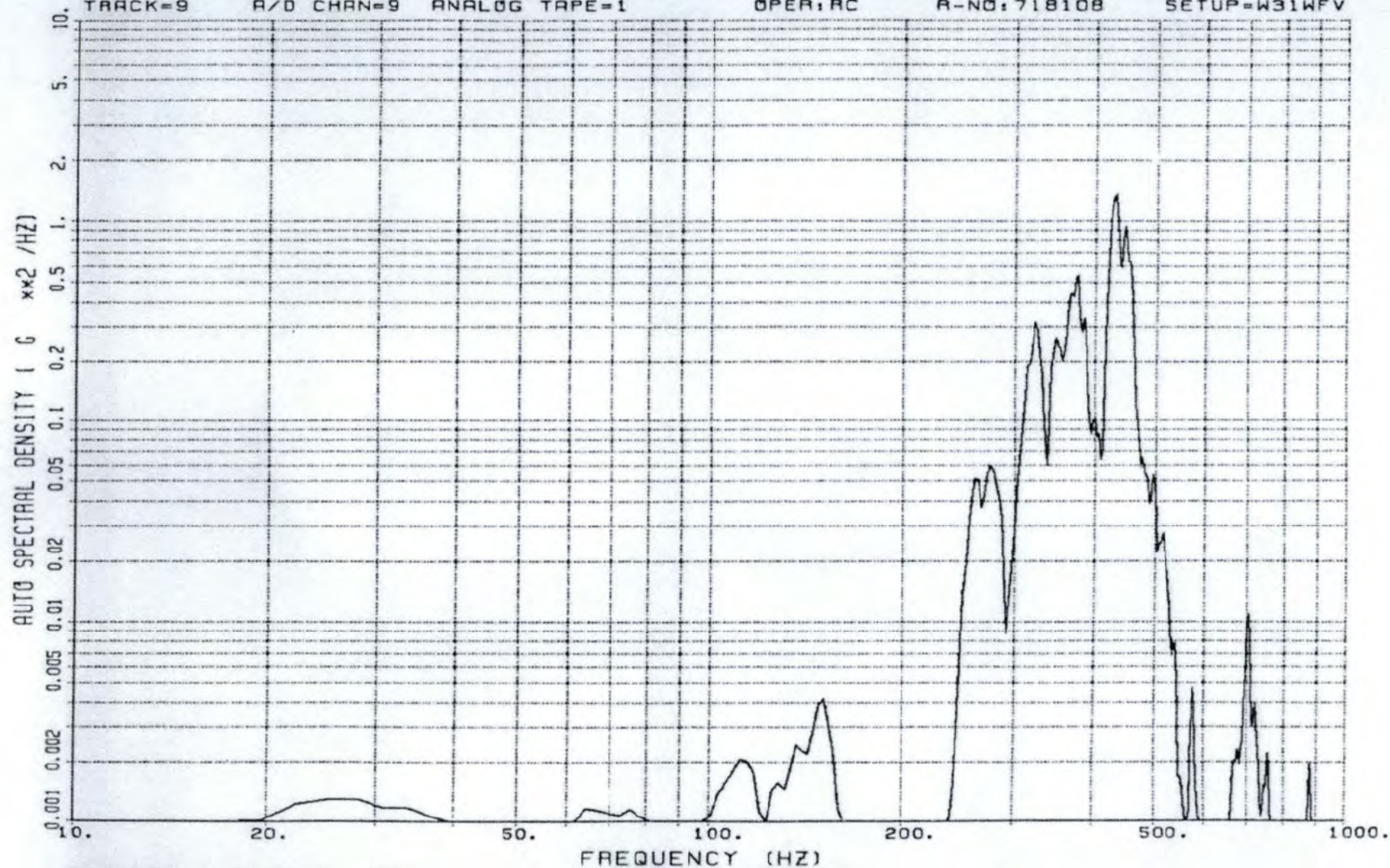
ENBW=5.034 SE(X)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=5.833 PLOTTED: 7:54 AM THU.. 18 JULY, 1985 FILE=PSEF04
 TRACK=4 A/D CHAN=4 ANALOG TAPE=1 OPER:AC R-NO:718108 SETUP=W31WV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:1 RUN NO:1 RUN DESC:TRANS. VIBRATION
 TRANS:W4-Z FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:Z
 TEST DATE:07/03/85
 FIGURE: 25

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=8.118 PLOTTED: 7:54 AM THU., 18 JULY, 1985 FILE=PSEF09
 TRACK=9 A/D CHAN=9 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WV

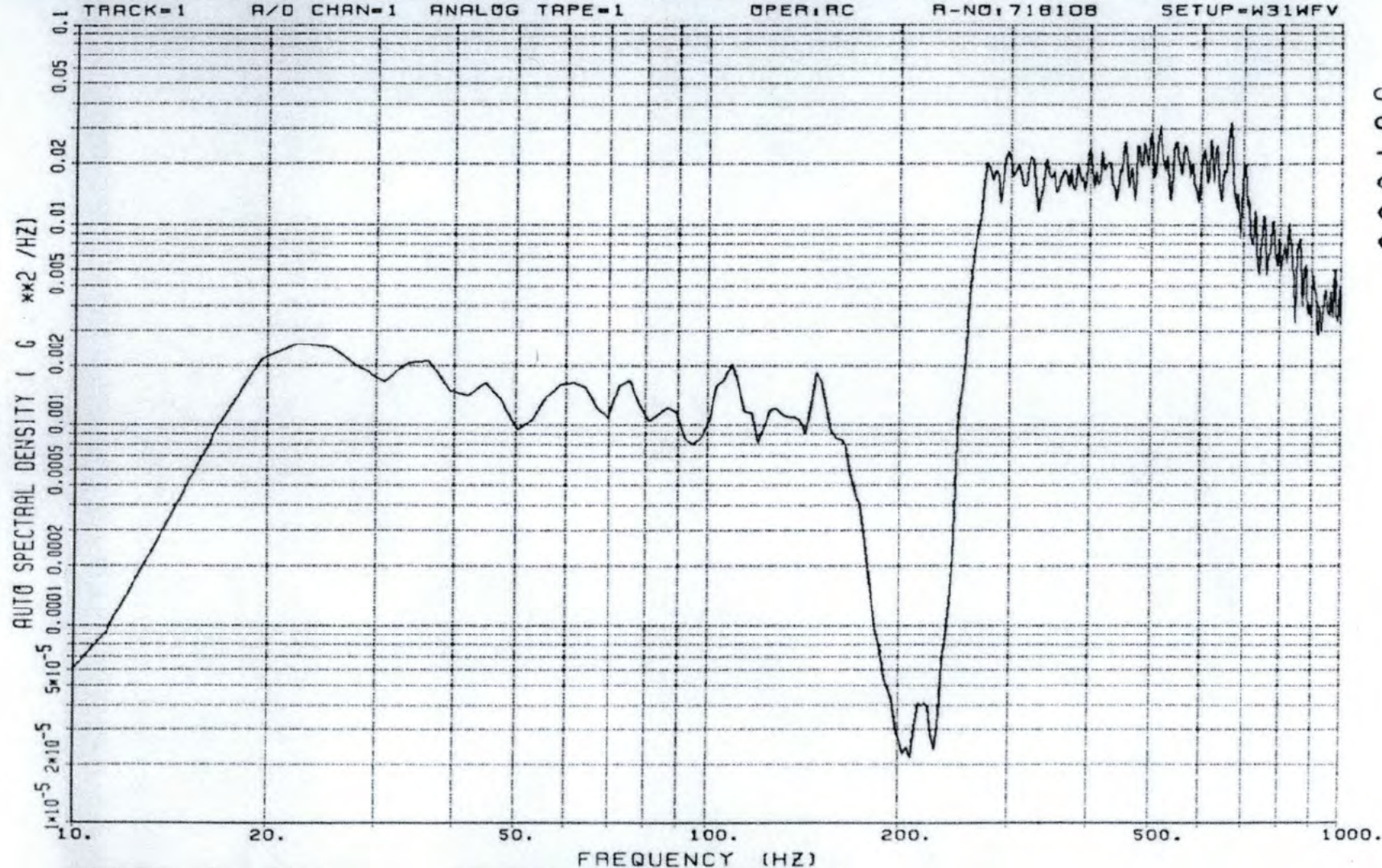


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:1 RUN NO:1 RUN DESC:TRANS. VIBRATION
 TRANS:A9-Z' MC3761 TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:Z
 TEST DATE:07/03/85
 FIGURE: 26

001049

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=3.240 PLOTTED:10:33 AM THU., 18 JULY, 1985 FILE=PSEF01
 TRACK=1 A/D CHAN=1 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WV

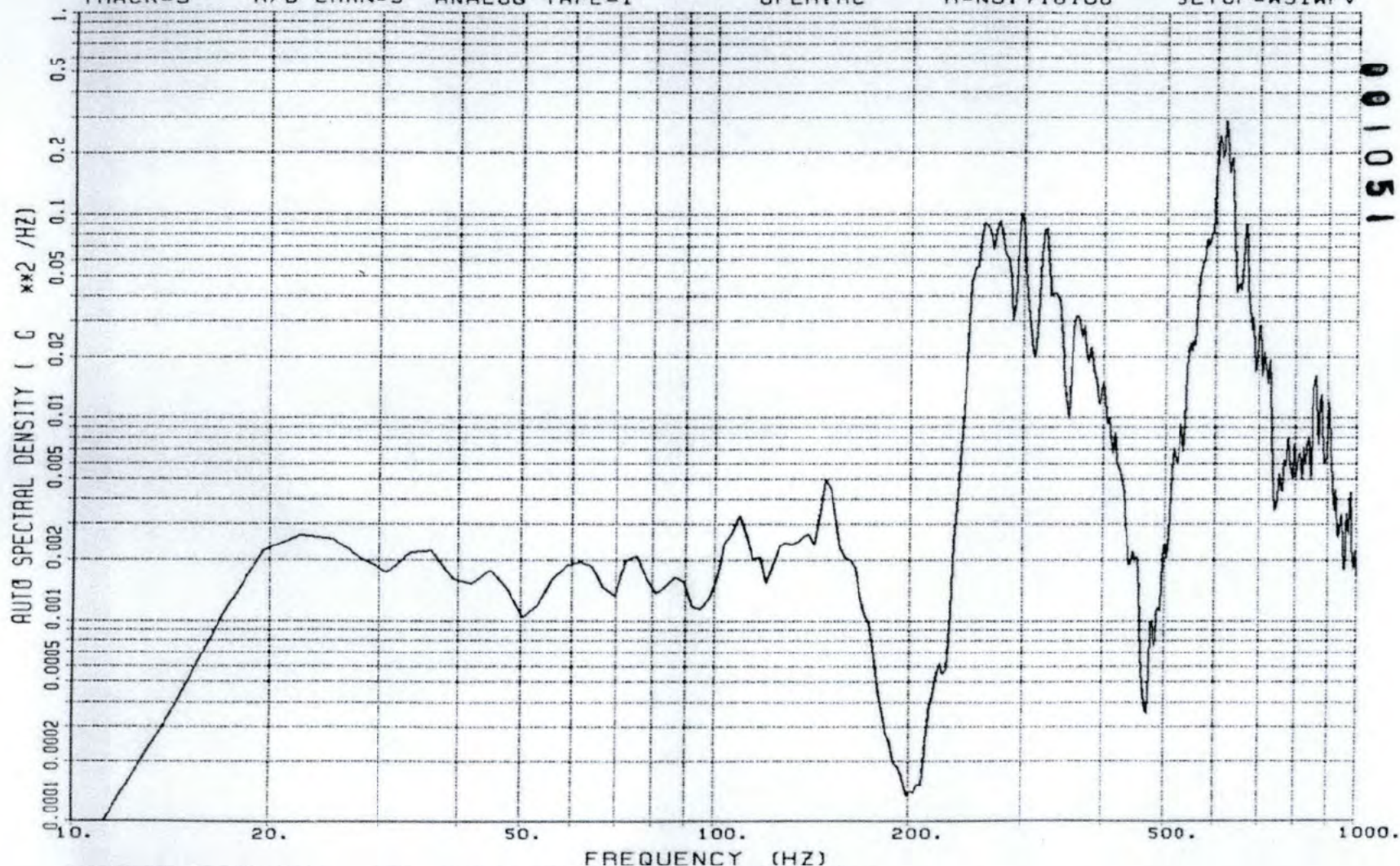


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:2 RUN NO:2 RUN DESC:VERT. VIBRATION
 TRANS:A1-Y CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:Y
 TEST DATE:07/03/85
 FIGURE: 27

001050

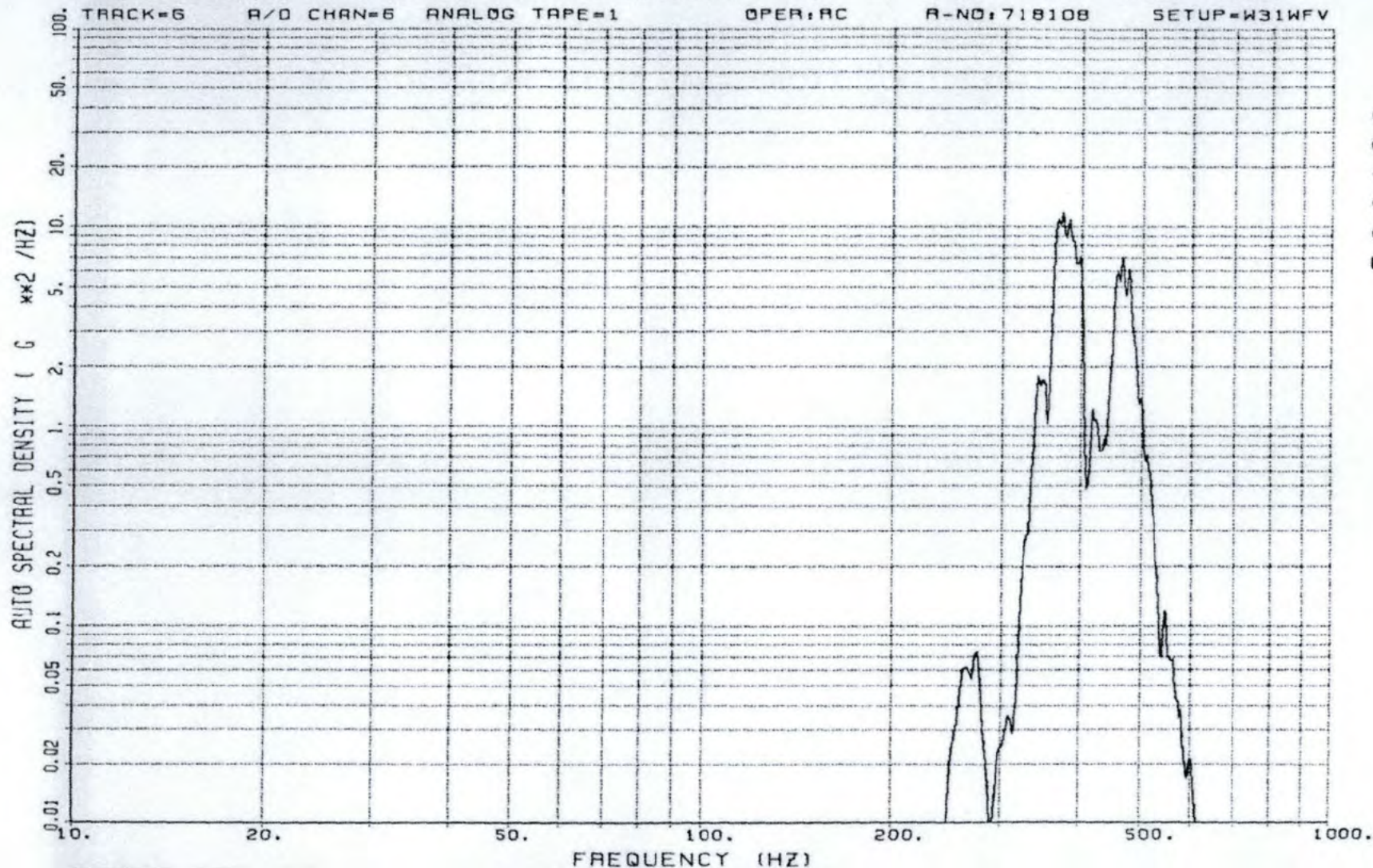
ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=4.934 PLOTTED:10:33 AM THU., 18 JULY, 1985 FILE=PSEG03
 TRACK=3 A/D CHAN=3 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WV



FREQUENCY (HZ)
 RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:2 RUN NO:2 RUN DESC:VERT. VIBRATION
 TRANS:A3-Y FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:Y
 TEST DATE:07/03/85
 FIGURE: 28

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
FILTER=2000.00 RMS=26.338 PLOTTED:10:33 AM THU., 18 JULY, 1985 FILE=PSEG06
TRACK=6 A/D CHAN=6 ANALOG TAPE=1 OPER:AC R-NO:718108 SETUP=W31WV



FREQUENCY (HZ)
RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
RUN INDEX:2 RUN NO:2 RUN DESC:VERT. VIBRATION
TRANS:AS-Y' MC3761 TRANS. AXIS:
TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:Y
TEST DATE:07/03/85
FIGURE: 29

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=3.112 PLOTTED:11:17 AM THU., 18 JULY, 1985 FILE=PSEG01
 TRACK=1 A/D CHAN=1 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WV

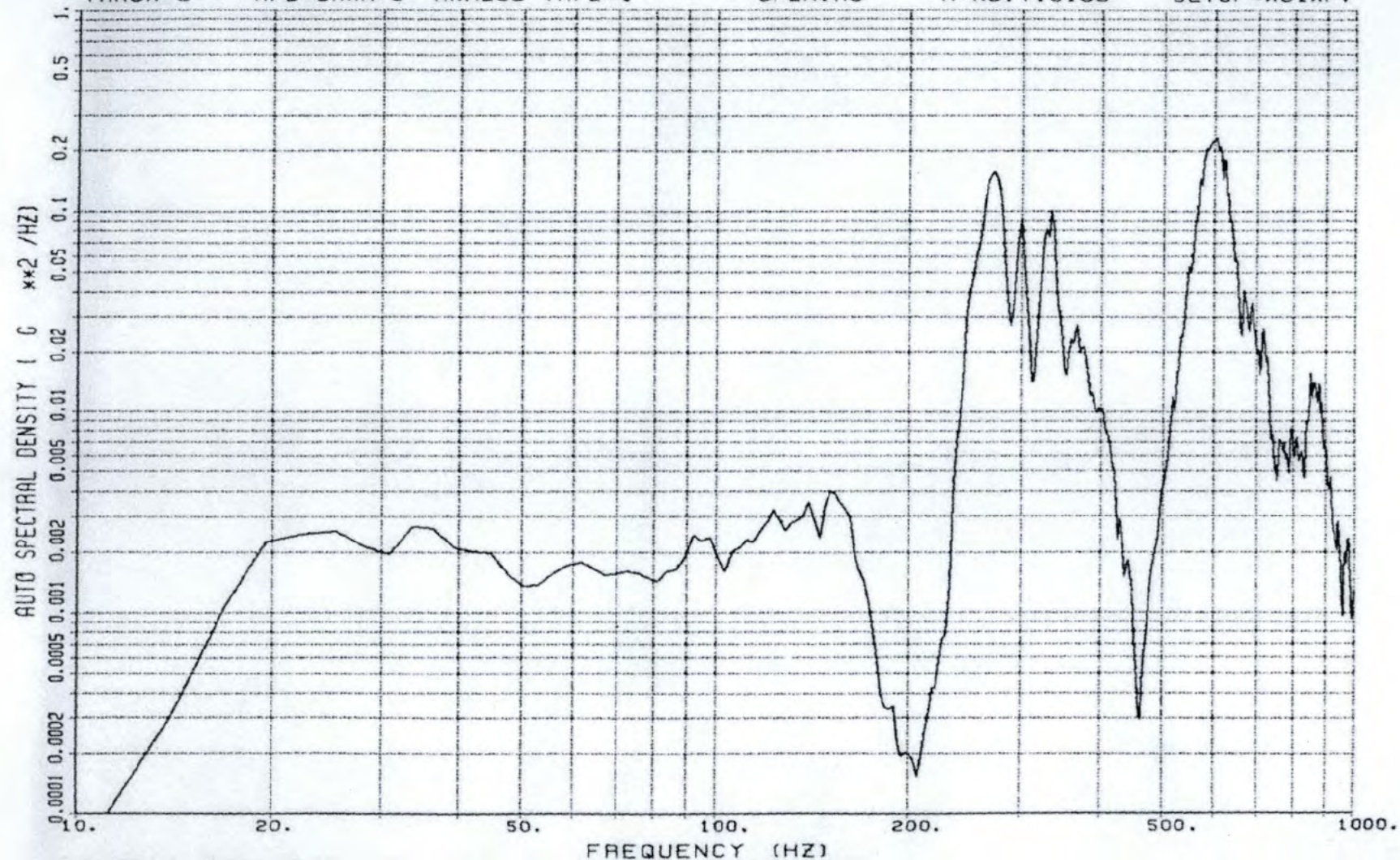


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:3 RUN NO:3 RUN DESC:VERT. VIBRATION
 TRANS:A1-Y CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Y
 TEST DATE:07/08/85
 FIGURE: 30

001053

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=5.289 PLOTTED:11:17 AM THU., 18 JULY, 1985 FILE=PSEH03
 TRACK=3 A/D CHAN=3 ANALOG TAPE=1 OPER:RC A-NO:718108 SETUP=W31WV

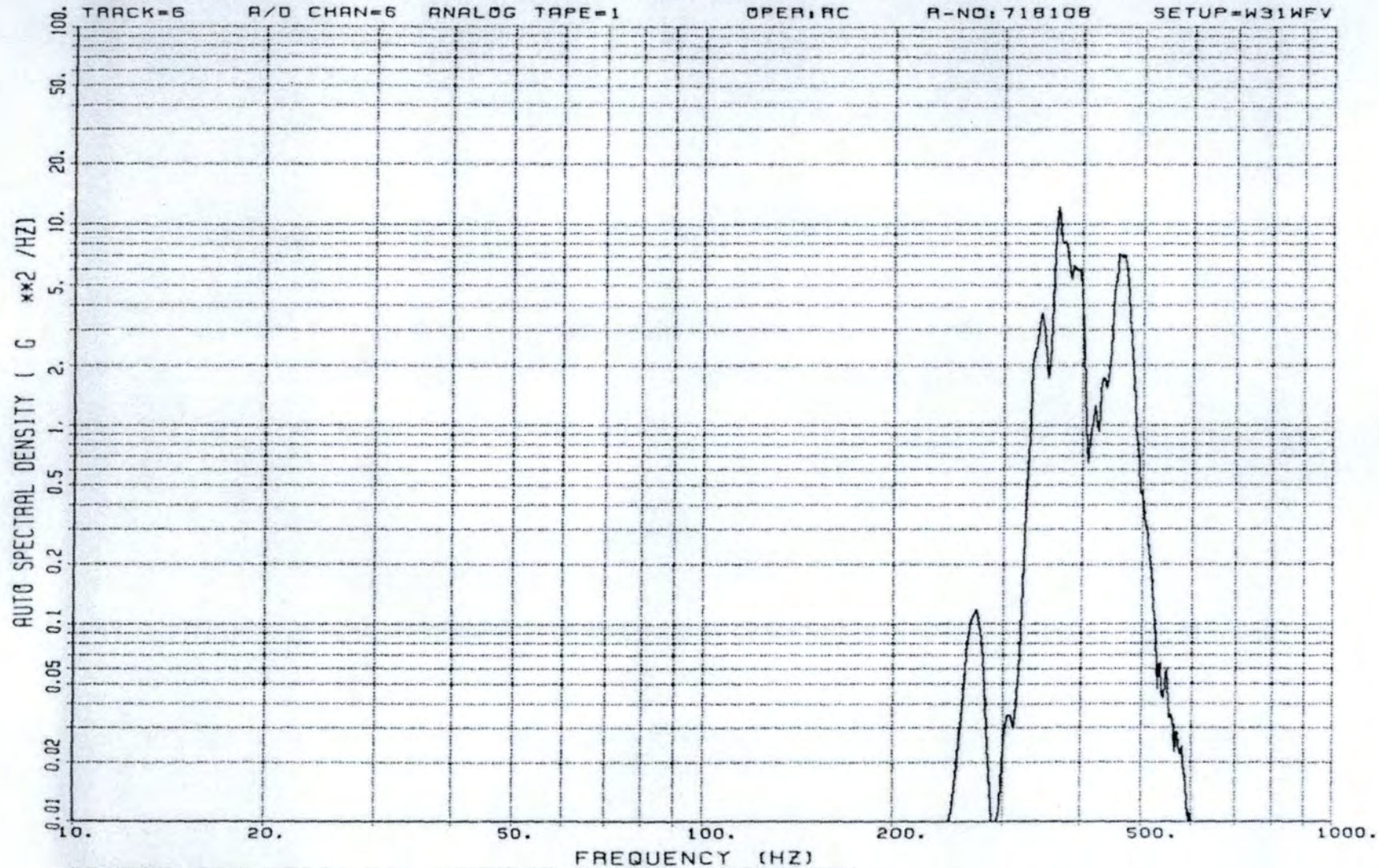


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:3 RUN NO:3 RUN DESC:VERT. VIBRATION
 TRANS:A3-Y FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Y
 TEST DATE:07/03/85
 FIGURE: 31

001054

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=25.750 PLOTTED:11:17 AM THU.. 18 JULY, 1985 FILE=PSEH06
 TRACK=6 A/D CHAN=6 ANALOG TAPE=1 OPER:RC R-NO:718106 SETUP=W31WFV

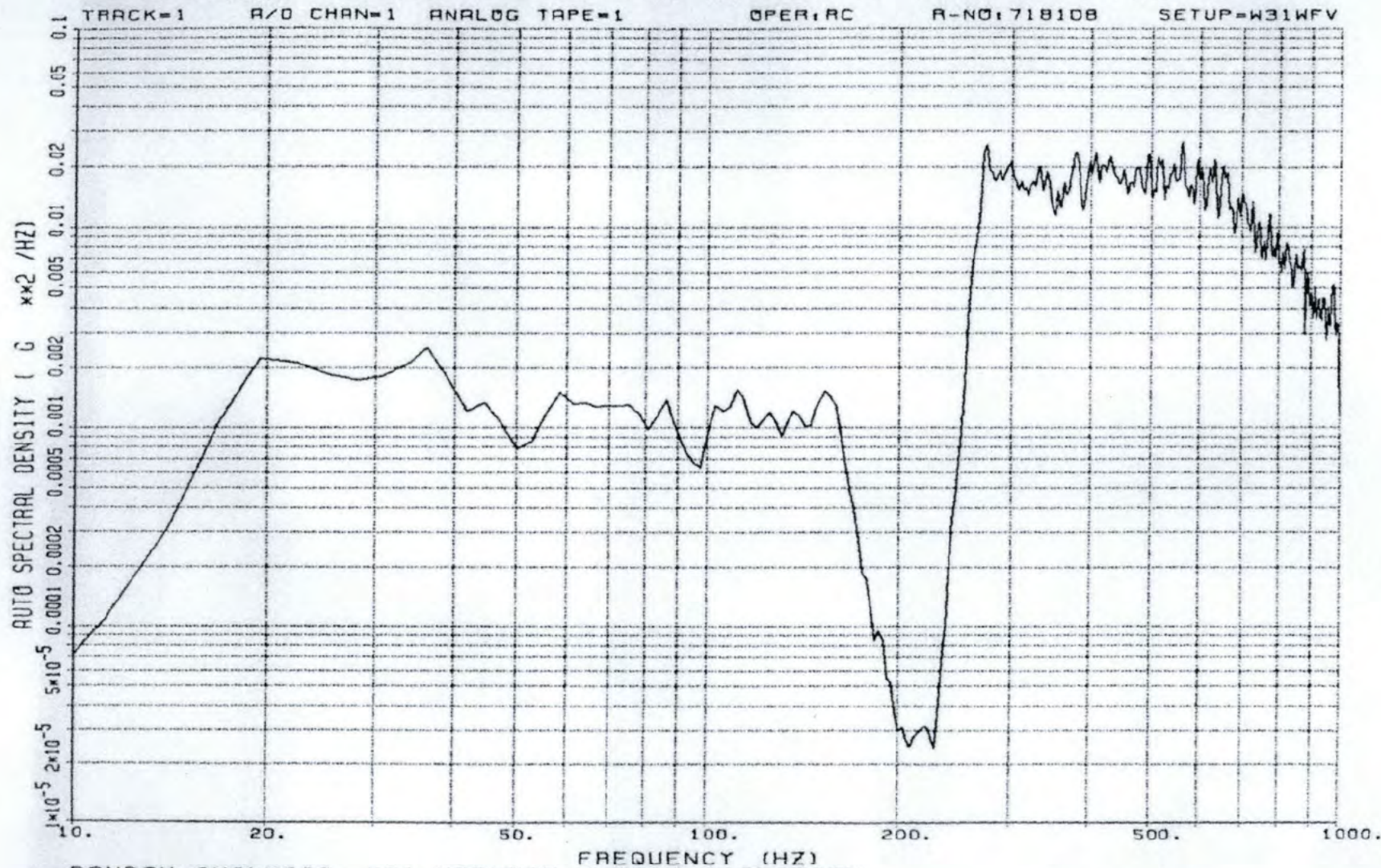


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:3 RUN NO:3 RUN DESC:VERT. VIBRATION
 TRANS:A6-Y' MC3761 TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Y
 TEST DATE:07/08/85
 FIGURE: 32

001055

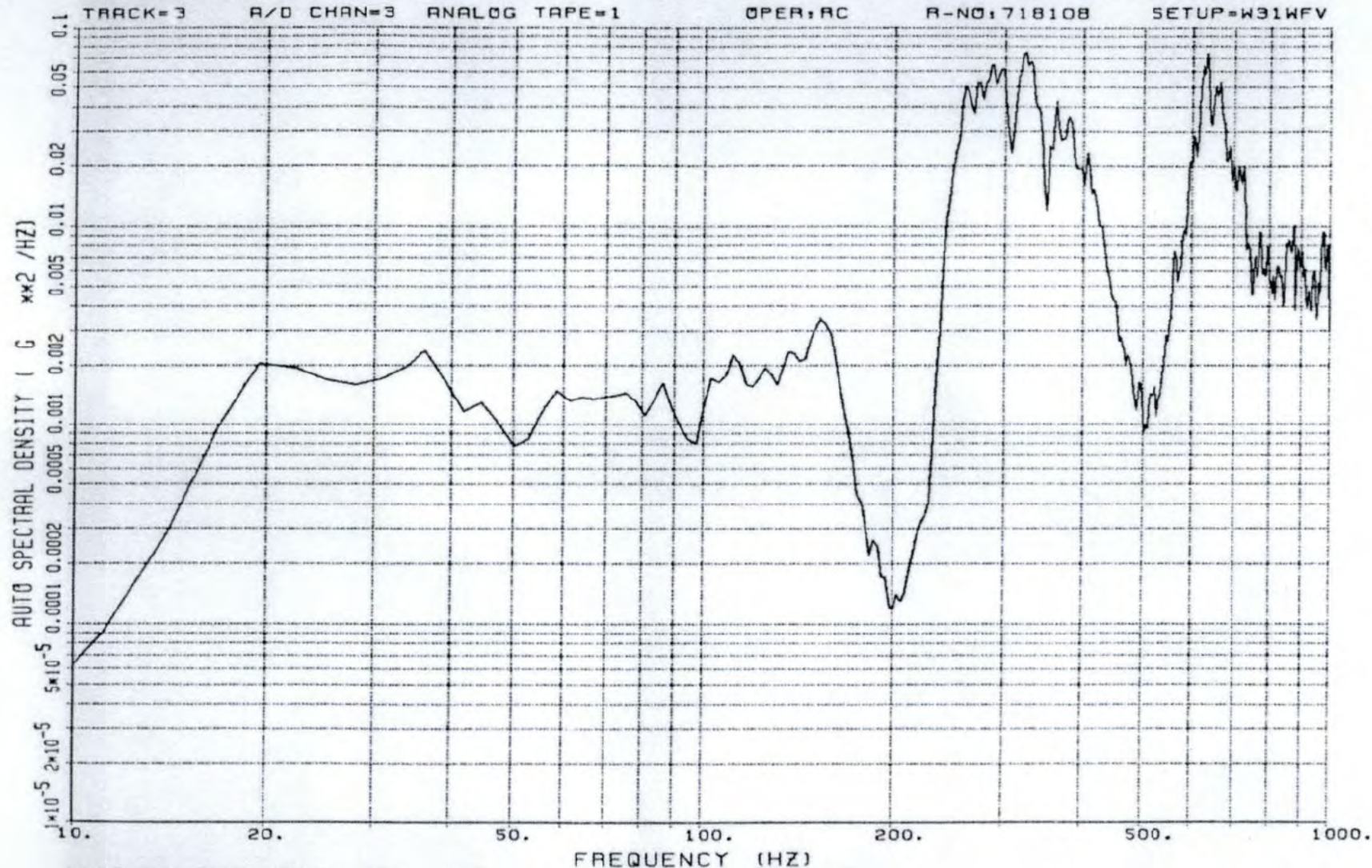
ENBW=5.017 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11415.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=3.125 PLOTTED: 1:08 PM FRI., 19 JULY, 1985 FILE=PSEK01
 TRACK=1 A/D CHAN=1 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:4 RUN NO:4 RUN DESC:VERT. VIBRATION
 TRANS:A1-Y CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:Y
 TEST DATE:07/09/85
 FIGURE: 33

ENBW=5.017 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11415.5 BLOCK SIZE=4096
 FILTER=2000.00 RMS=3.708 PLOTTED: 1:08 PM FRI., 19 JULY, 1985 FILE=PSEK03
 TRACK=3 A/D CHAN=3 ANALOG TAPE=1 OPER:AC R-NO:718108 SETUP=W31WV

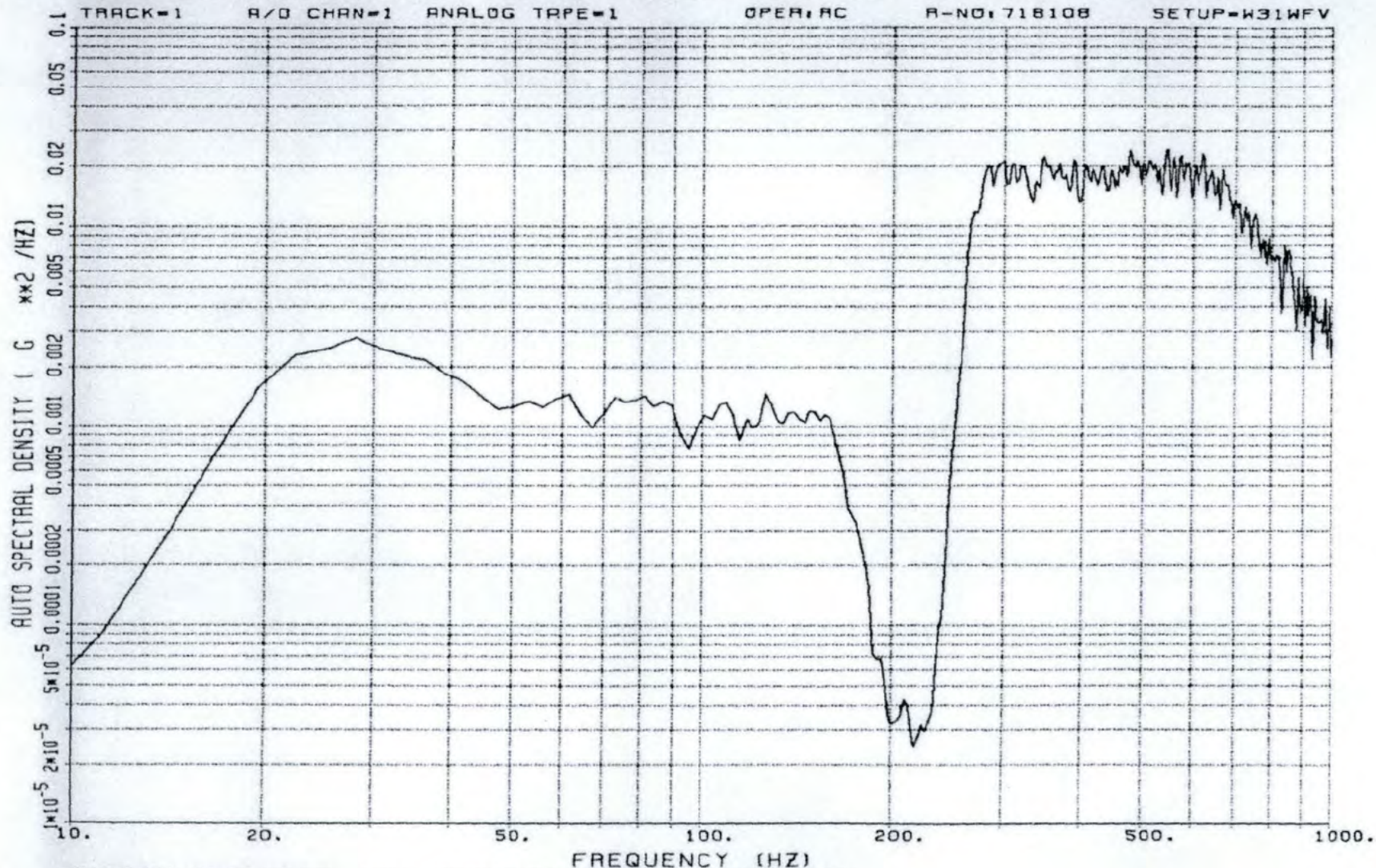


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:4 RUN NO:4 RUN DESC:VERT. VIBRATION
 TRANS:R3-Y FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:Y
 TEST DATE:07/09/85
 FIGURE: 34

001057

ENBW=5.034 SE(X)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=3.154 PLOTTED: 1:24 PM FRI.. 19 JULY, 1985 FILE=PSEM01
 TRACK=1 A/D CHAN=1 ANALOG TAPE=1 OPER:AC R-NO: 718108 SETUP=W31WFFV

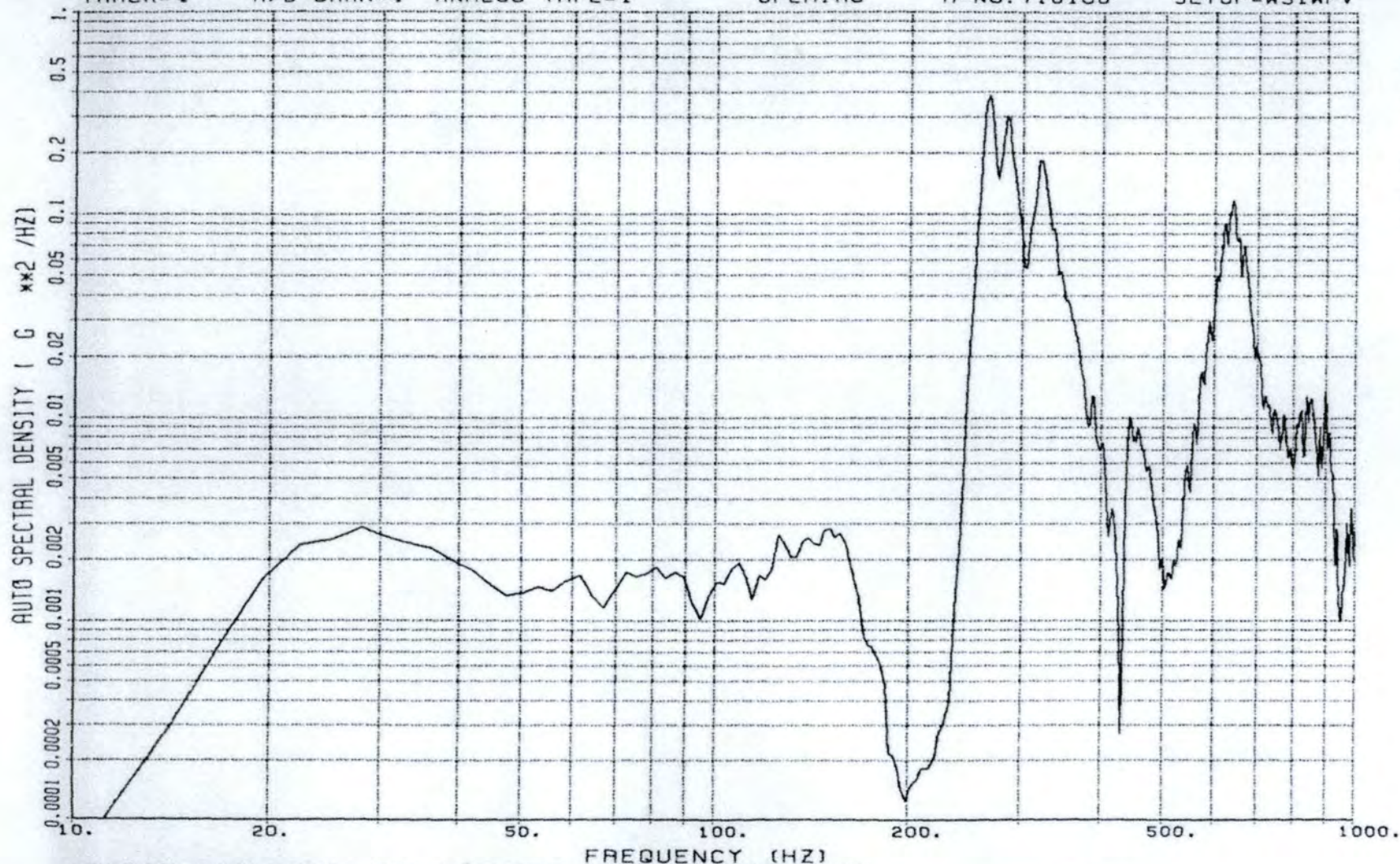


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:5 RUN NO:5 RUN DESC:TRANS. VIBRATION
 TRANS:R1-Z CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:Z
 TEST DATE:07/09/85
 FIGURE: 35

001008

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=5.095 PLOTTED: 1:24 PM FRI.. 19 JULY, 1985 FILE=PSEM04
 TRACK=4 A/D CHAN=4 ANALOG TAPE=1 OPER:AC R-NO:718108 SETUP=W31WFV

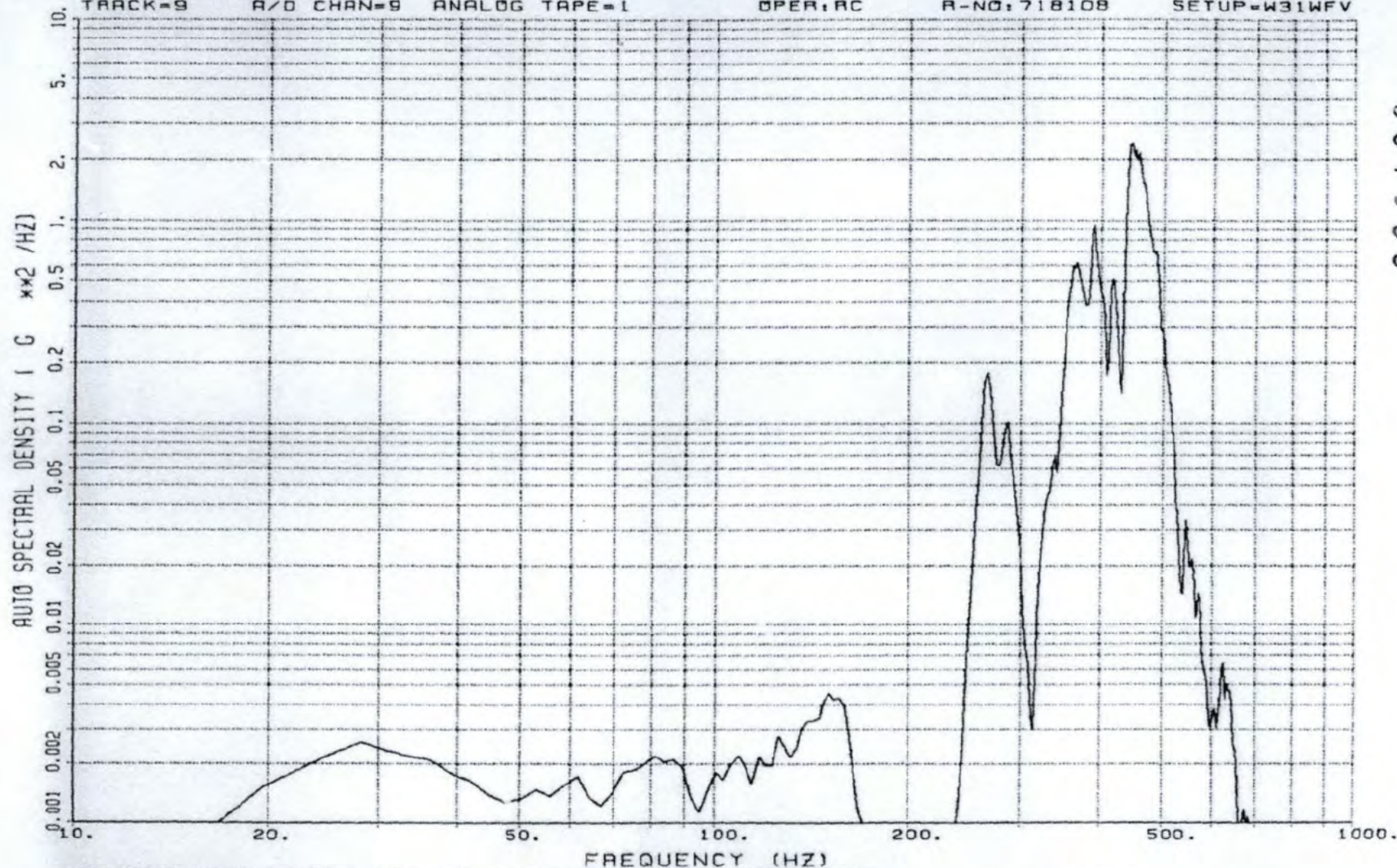


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:5 RUN NO:5 RUN DESC:TRANS. VIBRATION
 TRANS:A4-Z FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:Z
 TEST DATE:07/09/85
 FIGURE: 36

001059

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=11.514 PLOTTED: 1:24 PM FRI., 19 JULY, 1985 FILE=PSEM09
 TRACK=9 A/D CHAN=9 ANALOG TAPE=1 OPER:AC R-NQ:718108 SETUP=W31WV

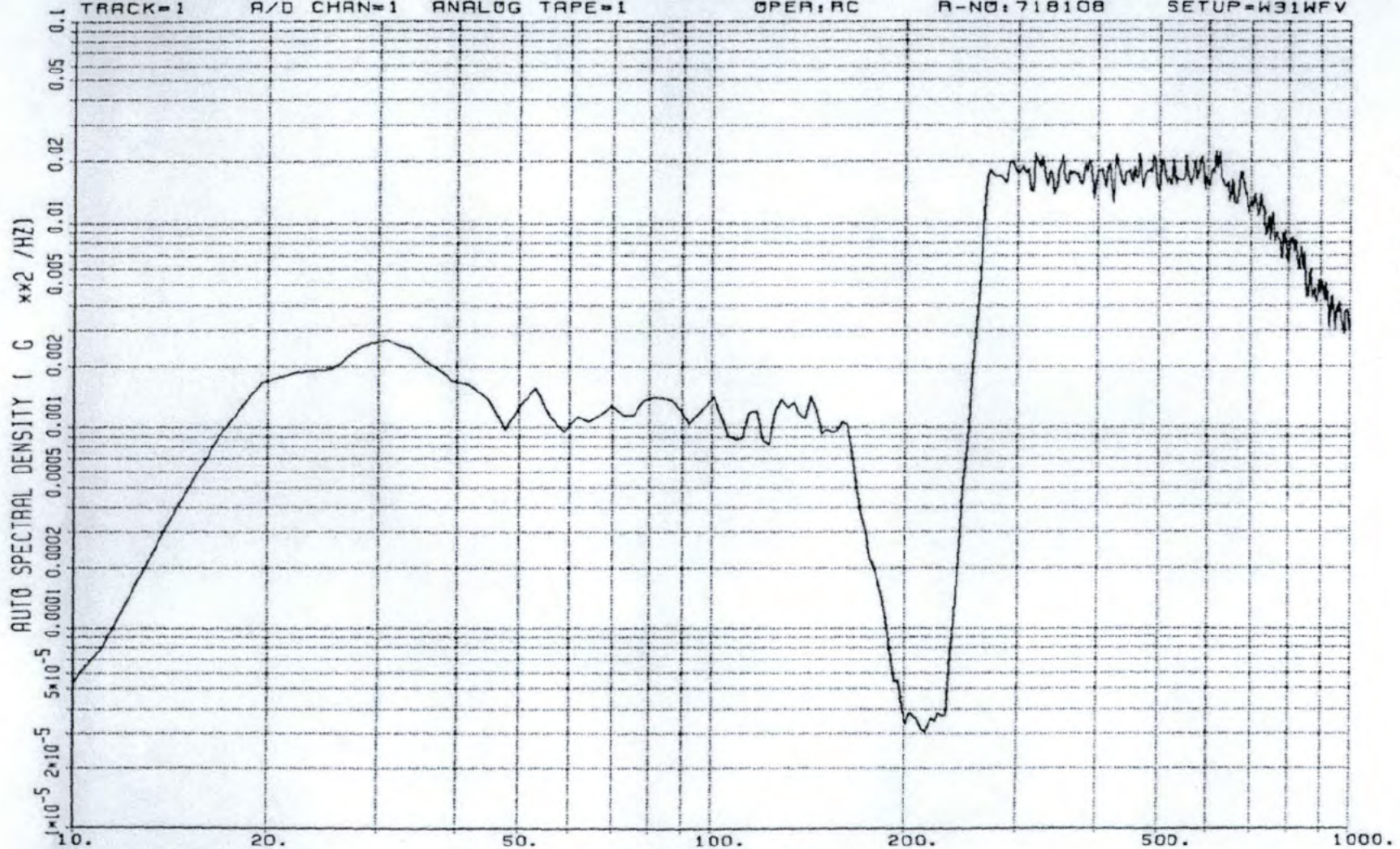


FREQUENCY (HZ)
 RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:5 RUN NO:5 RUN DESC:TRANS. VIBRATION
 TRANS:A9-Z' MC3761 TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:Z
 TEST DATE:07/09/85
 FIGURE: 37

090100

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=3.114 PLOTTED: 1:42 PM FRI., 19 JULY, 1985 FILE=PSEN01
 TRACK=1 A/D CHAN=1 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WV

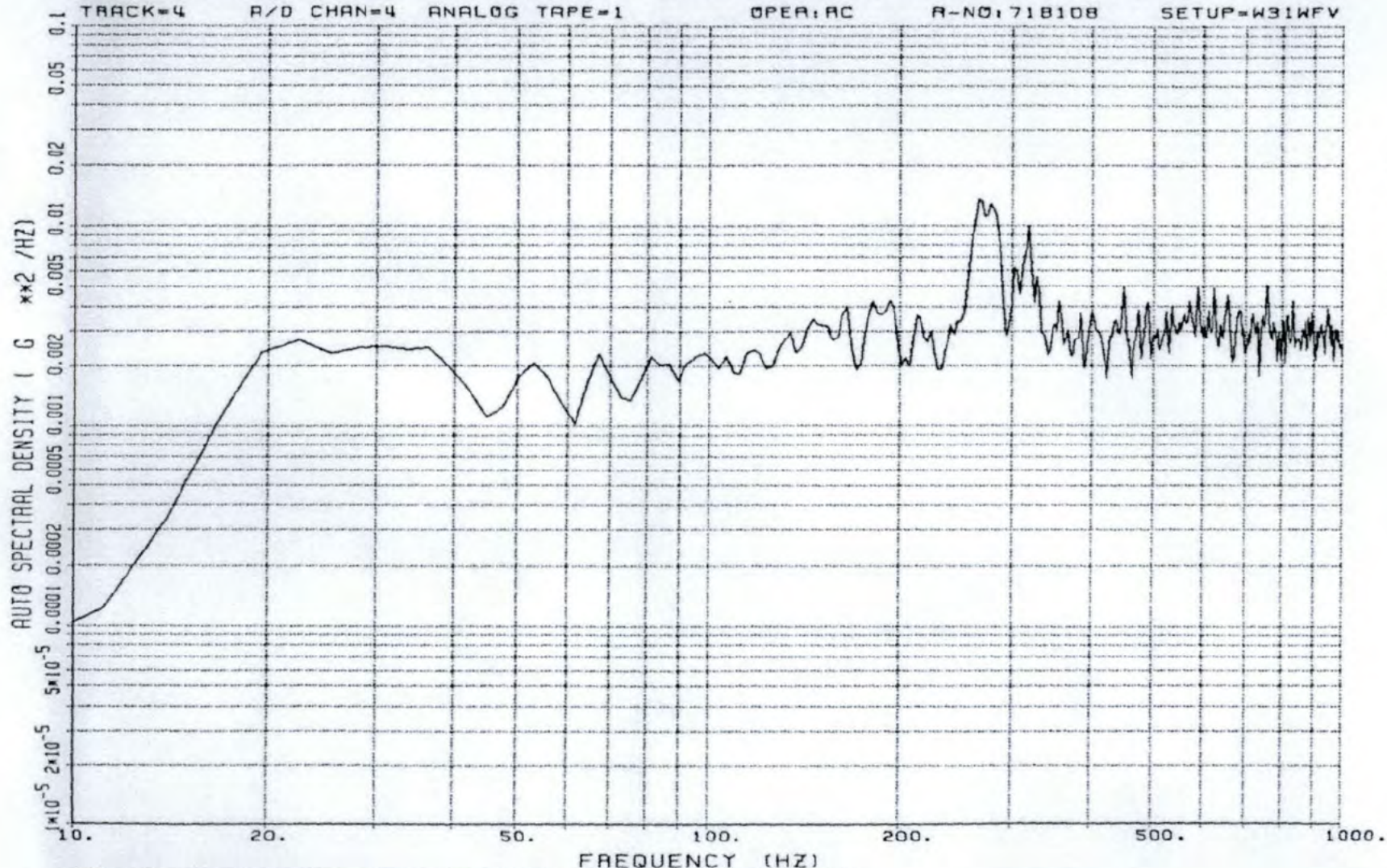


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:6 RUN NO:6 RUN DESC:TRANS. VIBRATION
 TRANS:A1-Z CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Z
 TEST DATE:07/10/85
 FIGURE: 38

190100

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=2.405 PLOTTED: 1:42 PM FRI., 19 JULY, 1985 FILE=PSEN04
 TRACK=4 A/D CHAN=4 ANALOG TAPE=1 OPER:AC R-NO:718108 SETUP=W31WV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:6 RUN NO:6 RUN DESC:TRANS. VIBRATION
 TRANS:R4-Z FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

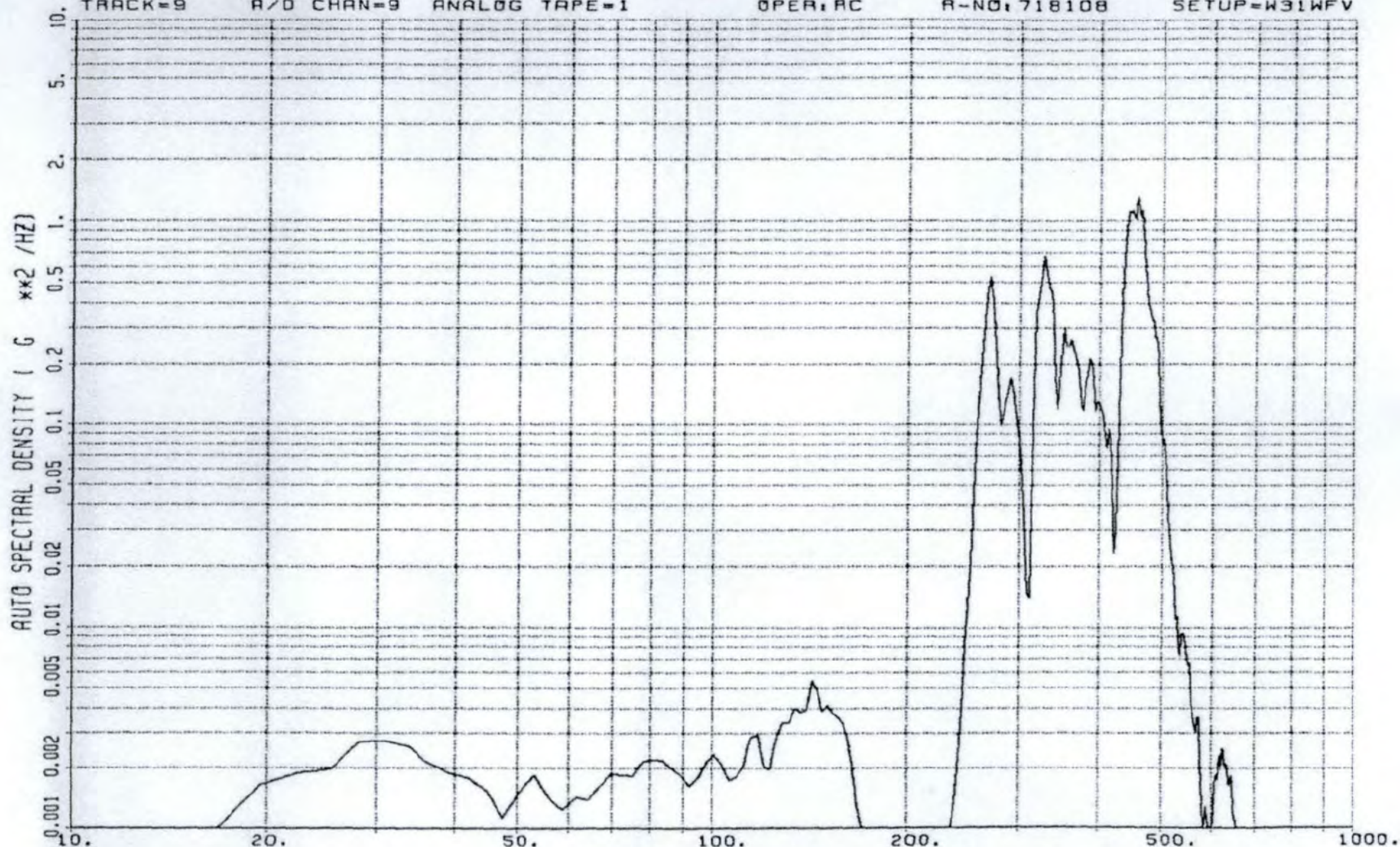
RUN AXIS:Z
 TEST DATE:07/10/85
 FIGURE: 39

BAD
 DATA

Fell off during Run

001062

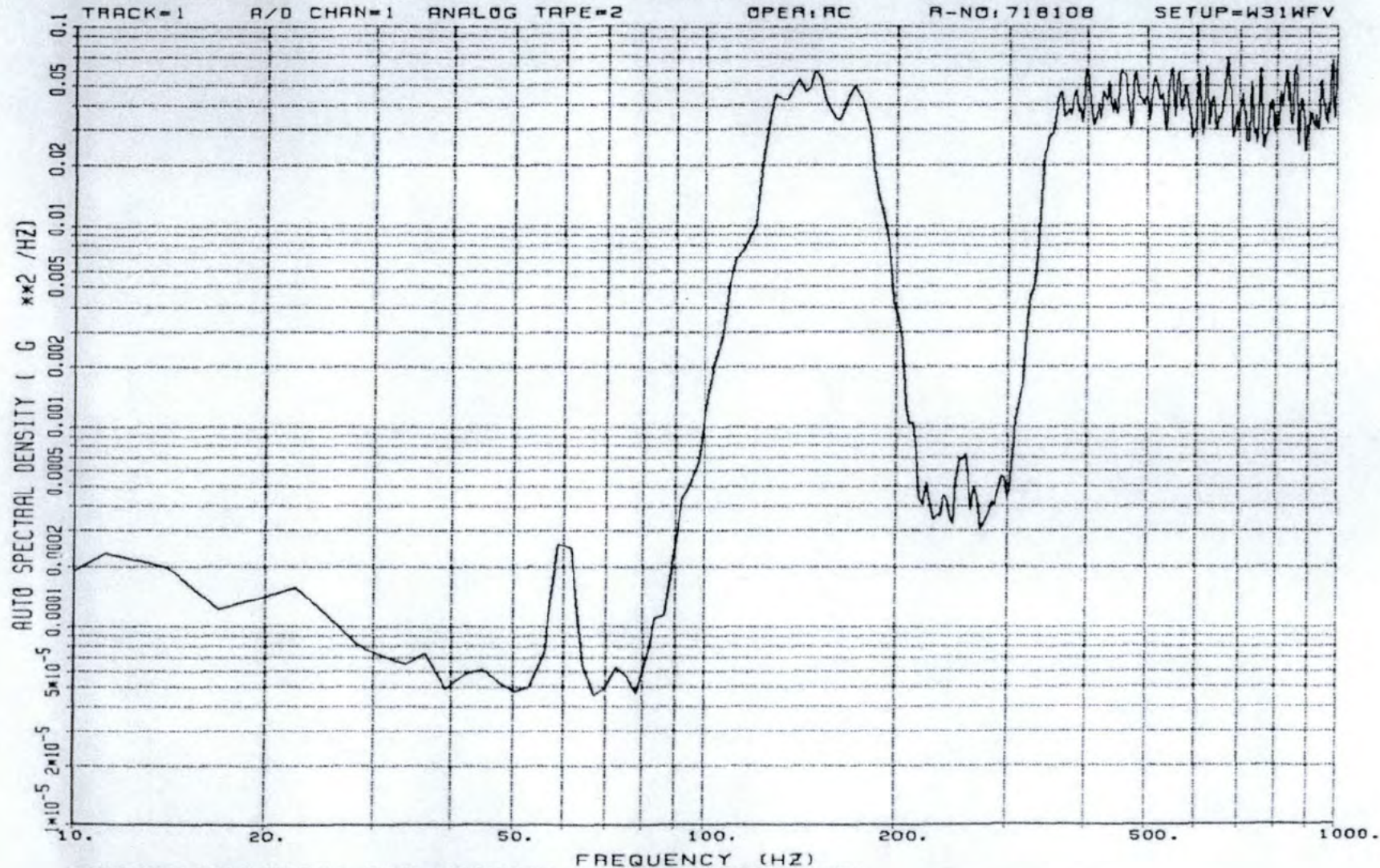
ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=9.086 PLOTTED: 1:42 PM FRI.. 19 JULY, 1985 FILE=PSEN09
 TRACK=9 A/D CHAN=9 ANALOG TAPE=1 OPER:RC R-NO:718108 SETUP=W31WV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:6 RUN NO:6 RUN DESC:TRANS. VIBRATION
 TRANS:A9-Z' MC3761 TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:Z
 TEST DATE:07/10/85
 FIGURE: 40

ENBW=5.034 SE(X)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=5.613 PLOTTED: 1:39 PM THU., 18 JULY, 1985 FILE=PSEJ01
 TRACK=1 A/D CHAN=1 ANALOG TAPE=2 OPER:RC R-NO:718108 SETUP=W31WFV

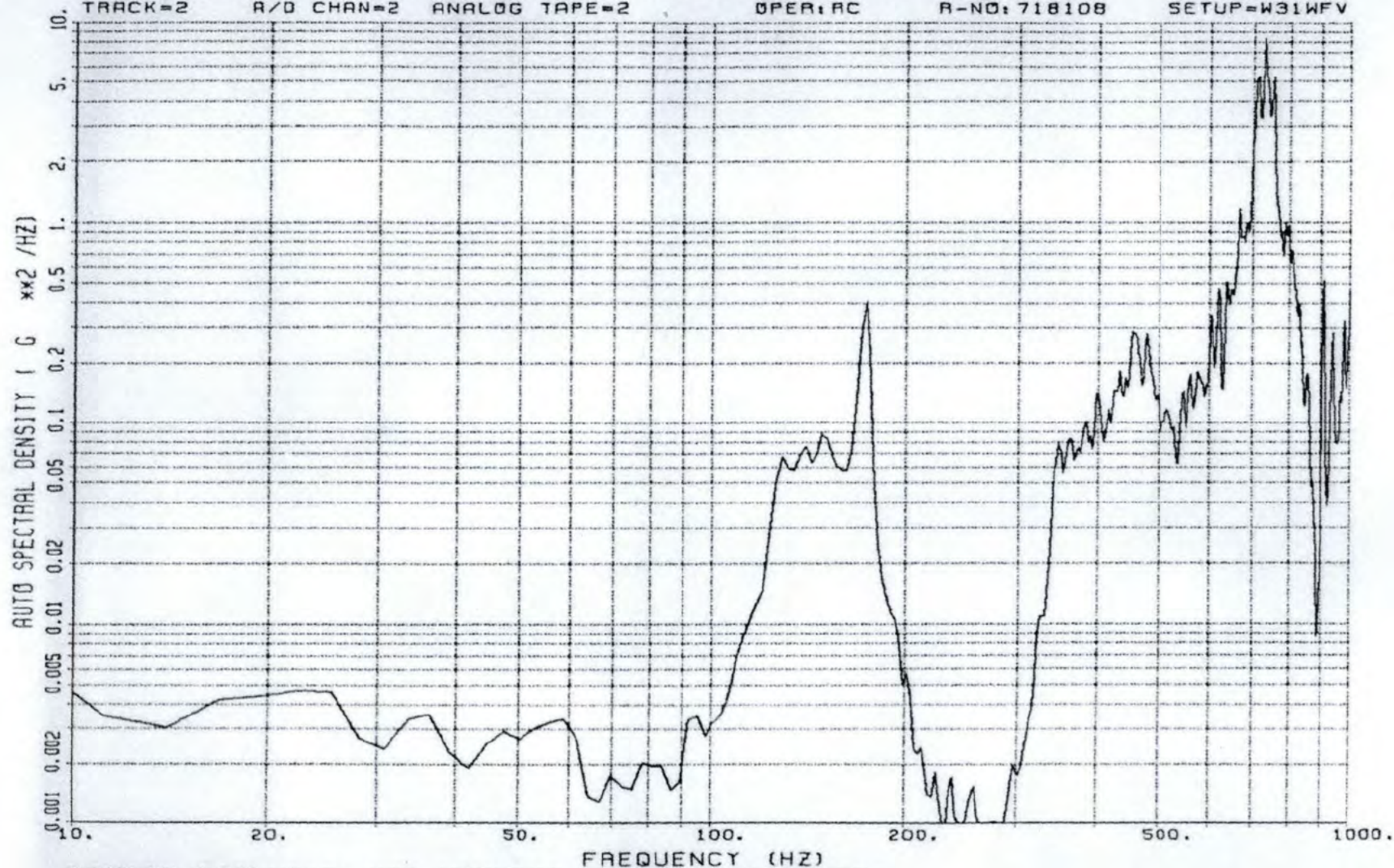


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:7 RUN NO:7 RUN DESC:LONG. VIBRATION
 TRANS:A1-X CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:X
 TEST DATE:07/11/85
 FIGURE: 4/

001064

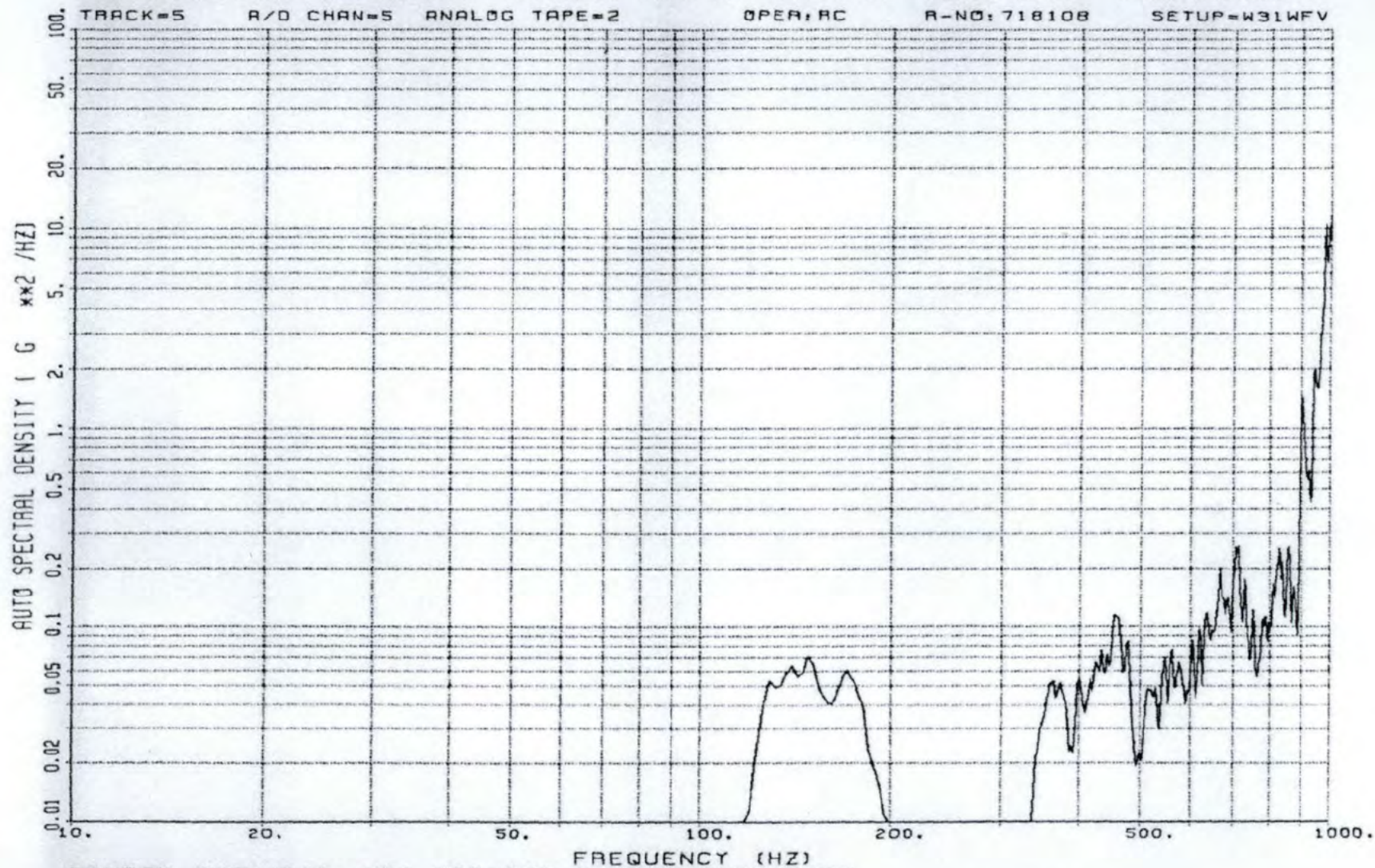
ENBW=5.034 SE (%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=21.689 PLOTTED: 1:39 PM THU.. 18 JULY. 1985 FILE=PSEJ02
 TRACK=2 A/D CHAN=2 ANALOG TAPE=2 OPER:RC R-NO: 718108 SETUP=W31WFV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX: 7 RUN NO: 7 RUN DESC: LONG. VIBRATION
 TRANS: A2-X FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION: 5 MIN. TEST TEMP: ROOM

RUN AXIS: X
 TEST DATE: 07/11/85
 FIGURE: 42

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=21.697 PLOTTED: 1:39 PM THU.. 18 JULY, 1985 FILE=PSEKOS
 TRACK=5 A/D CHAN=5 ANALOG TAPE=2 OPER, RC R-NO: 718108 SETUP=W31WV

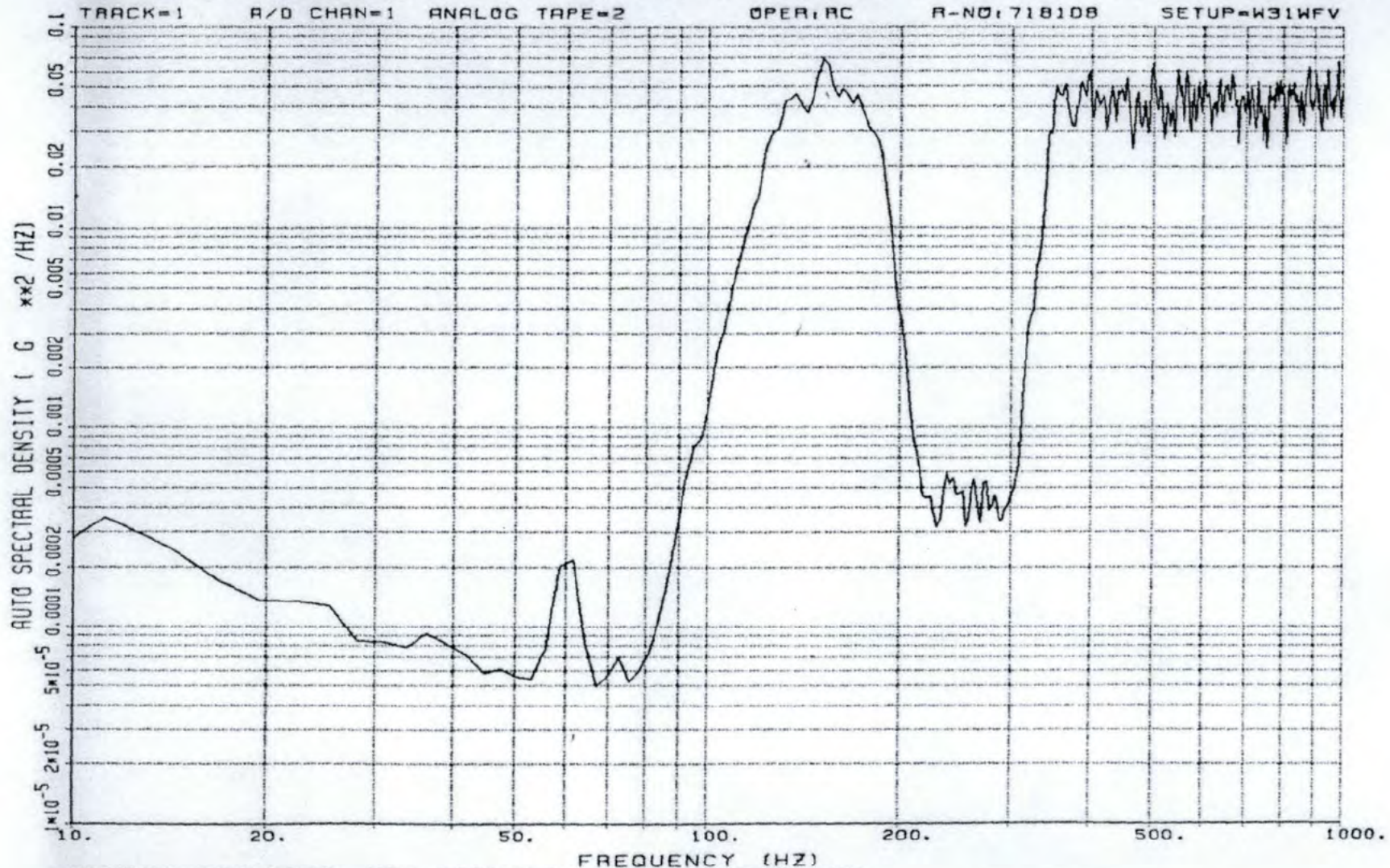


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:7 RUN NO:7 RUN DESC:LONG. VIBRATION
 TRANS:AS-X MC 3761 TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:ROOM

RUN AXIS:X
 TEST DATE:07/11/85
 FIGURE: 43

990100

ENBW=5.034 SE(X)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=5.657 PLOTTED: 1:12 PM THU., 18 JULY, 1985 FILE=PSEI01
 TRACK=1 A/D CHAN=1 ANALOG TAPE=2 OPER:RC R-NO:718108 SETUP=W31WV

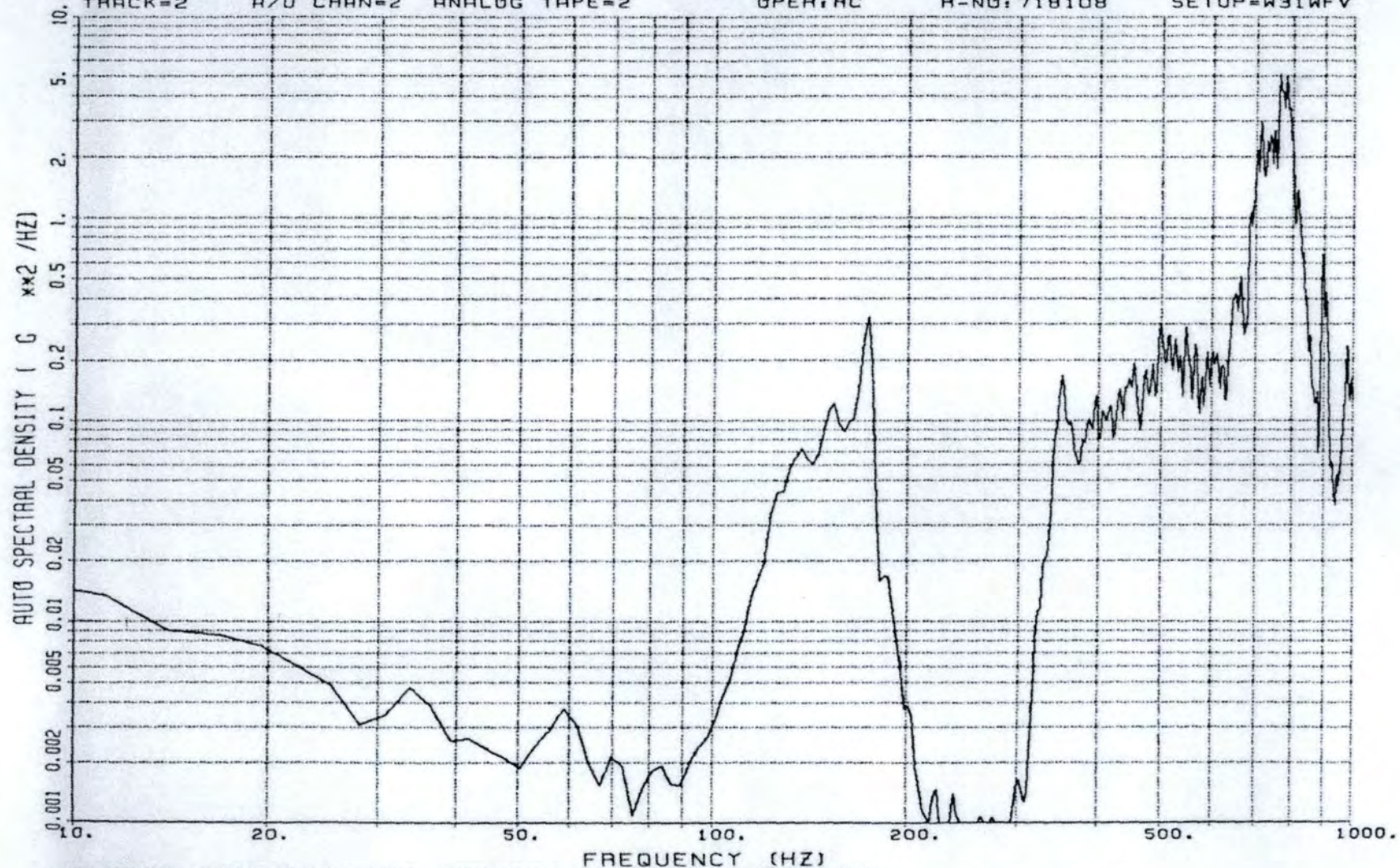


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:8 RUN NO:8 RUN DESC:LONG. VIBRATION
 TRANS:A1-X CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:X
 TEST DATE:07/12/85
 FIGURE: 44

001067

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=21.183 PLOTTED: 1:12 PM THU., 18 JULY, 1985 FILE=PSE102
 TRACK=2 A/D CHAN=2 ANALOG TAPE=2 OPER:AC R-NO:718108 SETUP=W31WV

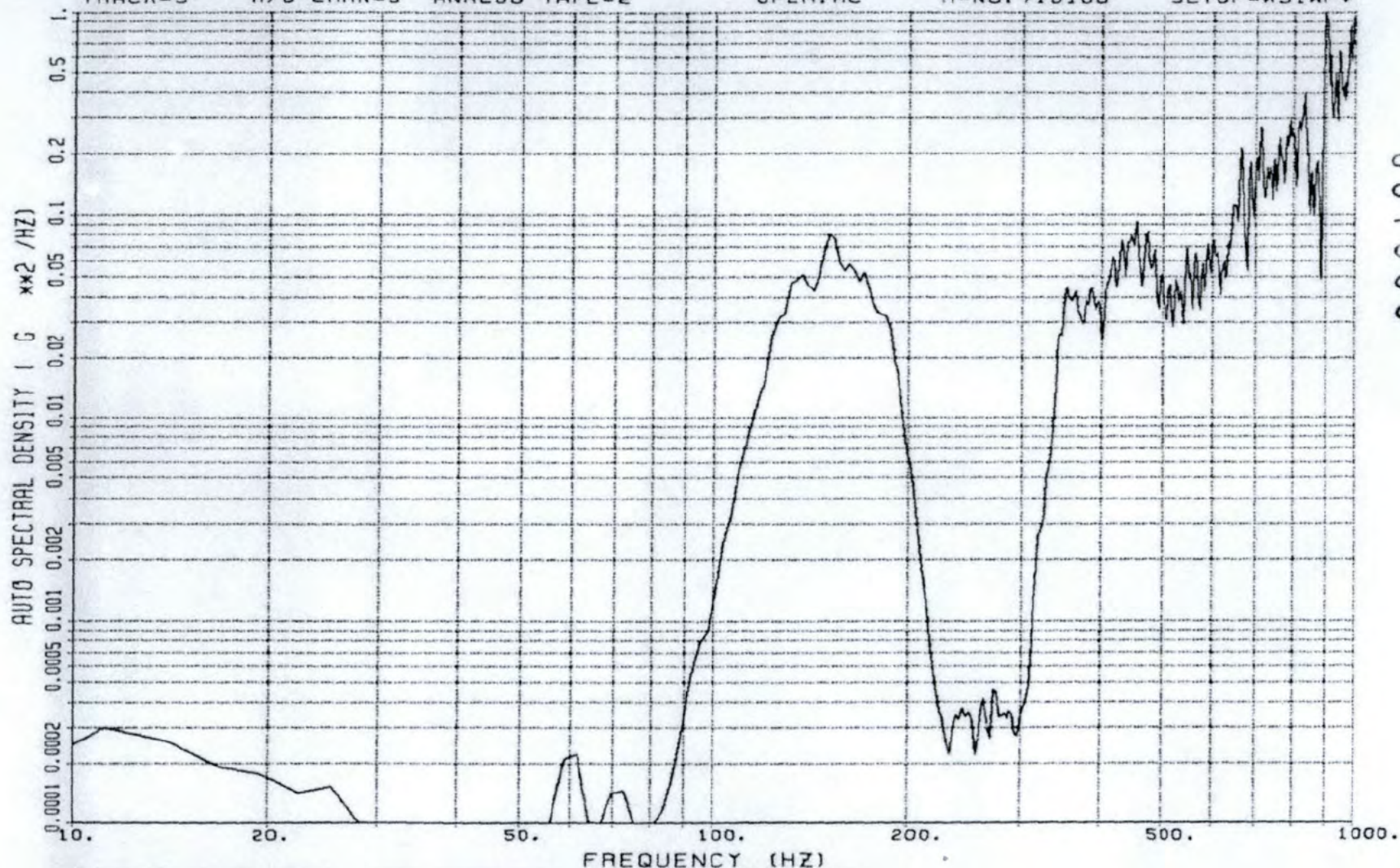


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:8 RUN NO:8 RUN DESC:LONG. VIBRATION
 TRANS:A2-X FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:-25 F

RUN AXIS:X
 TEST DATE:07/12/85
 FIGURE: 45

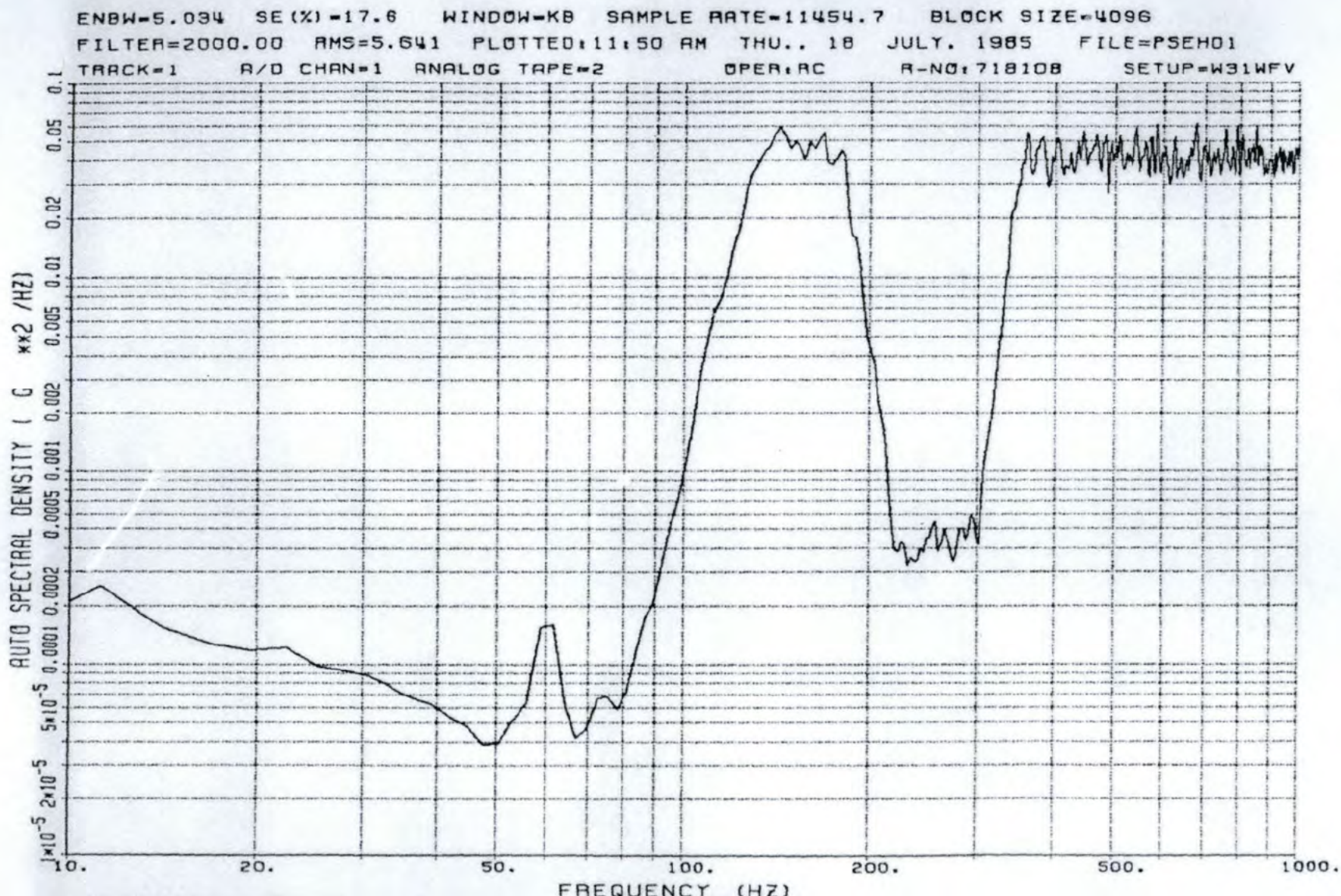
890100

ENBW=5.034 SE(X)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=11.422 PLOTTED: 1:12 PM THU.. 18 JULY, 1985 FILE=PSEJ05
 TRACK=5 A/D CHAN=5 ANALOG TAPE=2 OPER:AC R-NO:718108 SETUP=W31WV



RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX: 8 RUN NO: 8 RUN DESC: LONG. VIBRATION
 TRANS: A5-X MC 3761 TRANS. AXIS:
 TEST DURATION: 5 MIN. TEST TEMP: -25 F

RUN AXIS: X
 TEST DATE: 07/12/85
 FIGURE: 46

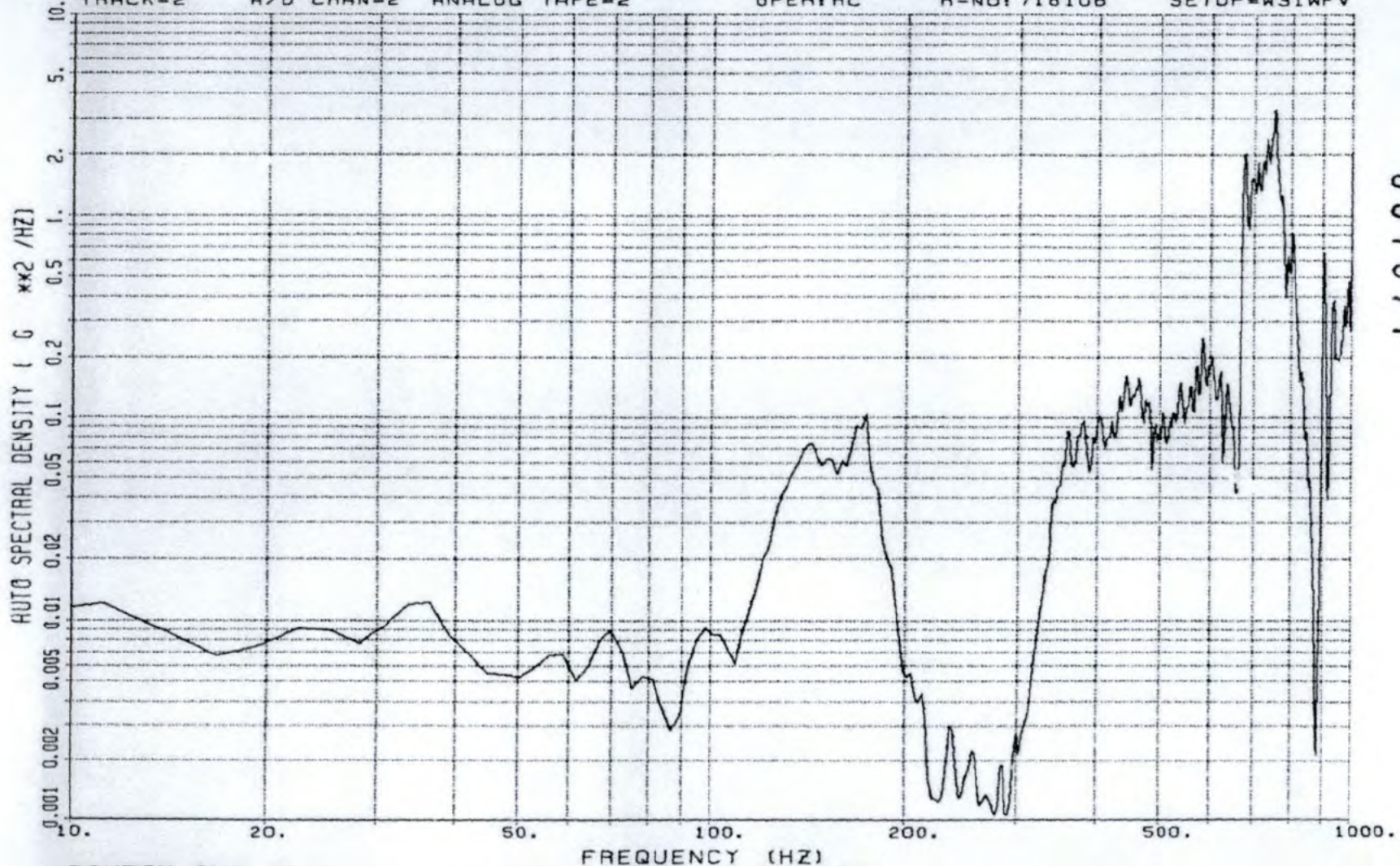


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:9 RUN NO:9 RUN DESC:LONG. VIBRATION
 TRANS:A1-X CONTROL FIXTURE BASE TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:X
 TEST DATE:07/15/85
 FIGURE: 47

001070

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=17.469 PLOTTED:11:50 AM THU.. 18 JULY, 1985 FILE=PSEH02
 TRACK=2 A/D CHAN=2 ANALOG TAPE=2 OPER:RC R-NO:718108 SETUP=W31WFFV

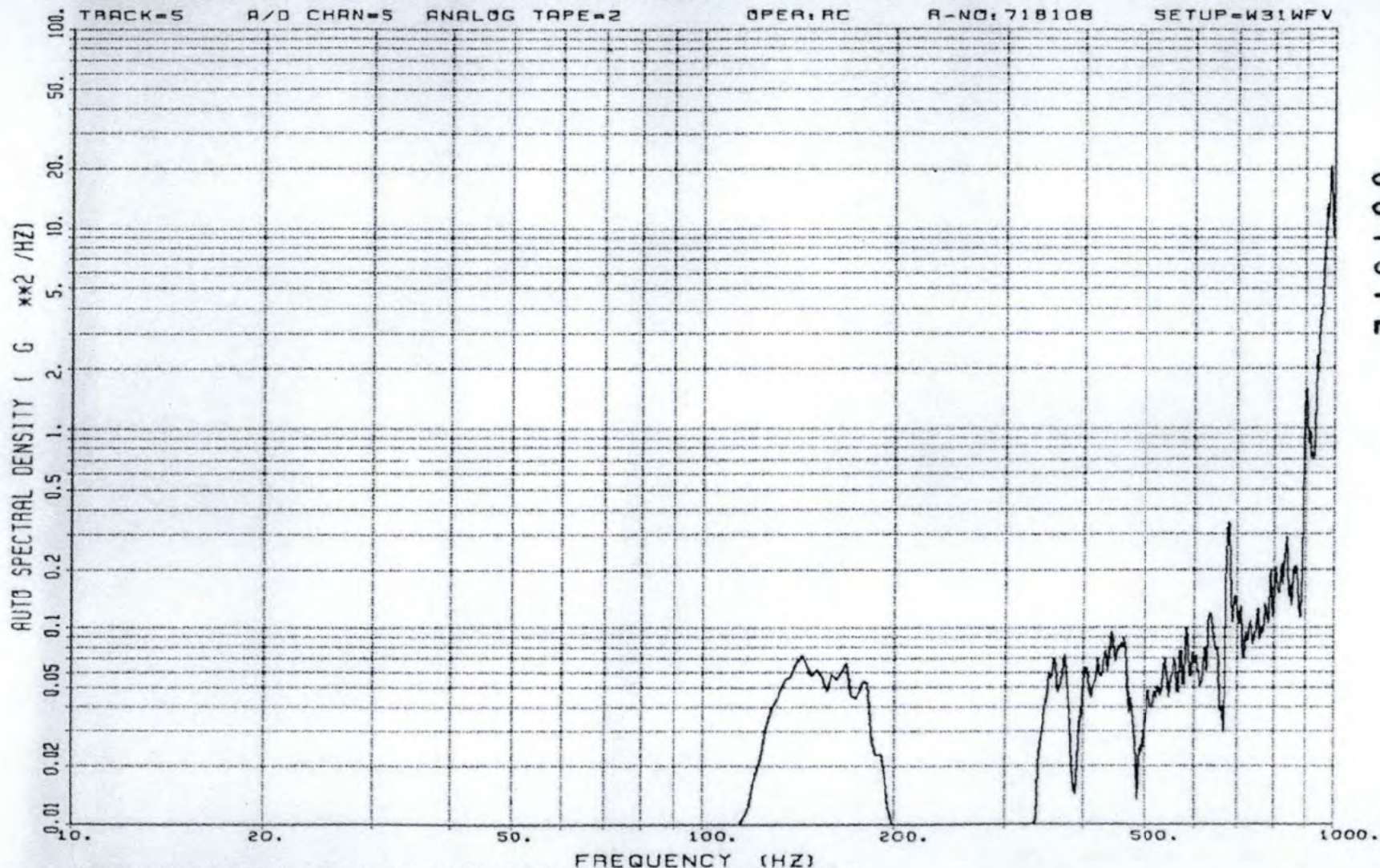


RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:9 RUN NO:9 RUN DESC:LONG. VIBRATION
 TRANS:A2-X FIRING SET HOUSING TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

RUN AXIS:X
 TEST DATE:07/15/85
 FIGURE: 48

001071

ENBW=5.034 SE(%)=17.6 WINDOW=KB SAMPLE RATE=11454.7 BLOCK SIZE=4096
 FILTER=2000.00 RMS=34.000 PLOTTED:11:50 AM THU.. 18 JULY, 1985 FILE=PSEI05
 TRACK=5 A/D CHAN=5 ANALOG TAPE=2 OPER:RC R-NO:718108 SETUP=W31WV



FREQUENCY (HZ)
 RANDOM ANALYSIS: W31 WARHEAD FLIGHT VIBRATION
 RUN INDEX:9 RUN NO:9 RUN DESC:LONG. VIBRATION
 TRANS:R5-X MC 3761 TRANS. AXIS:
 TEST DURATION:5 MIN. TEST TEMP:+125 F

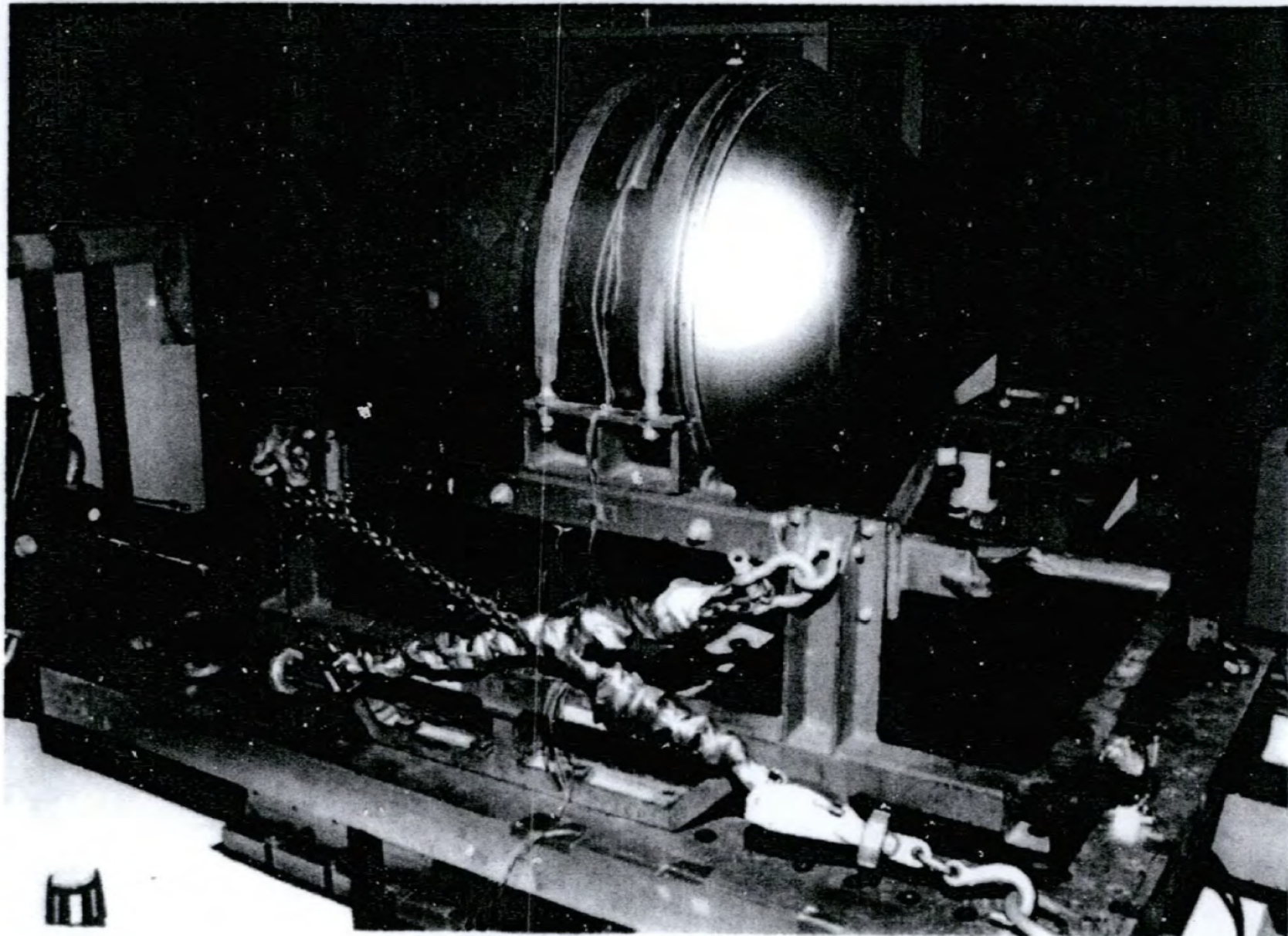
RUN AXIS:X
 TEST DATE:07/15/85
 FIGURE: 49

001073

APPENDIX

COLOR PHOTOGRAPHS

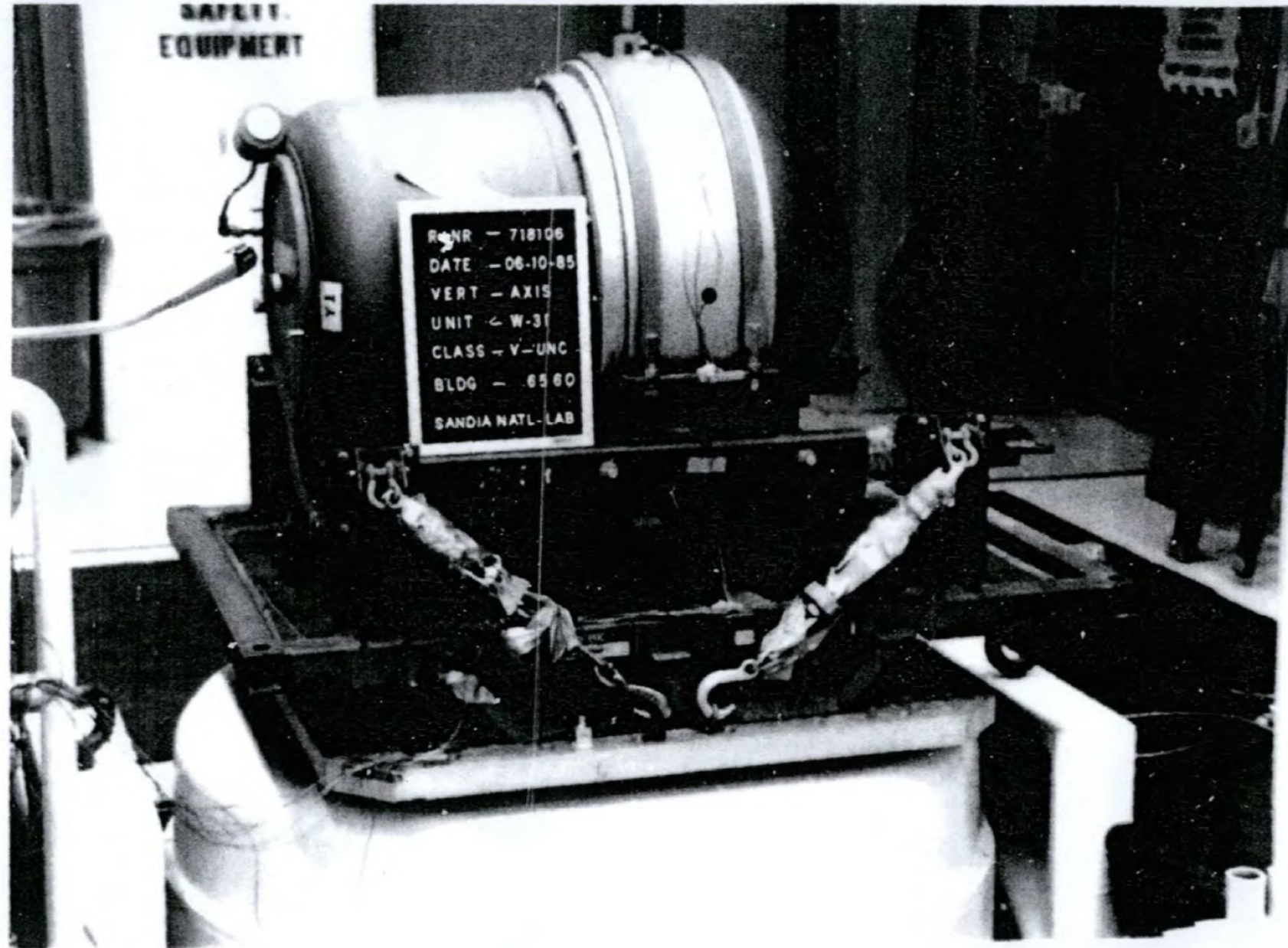
OFFICIAL USE ONLY



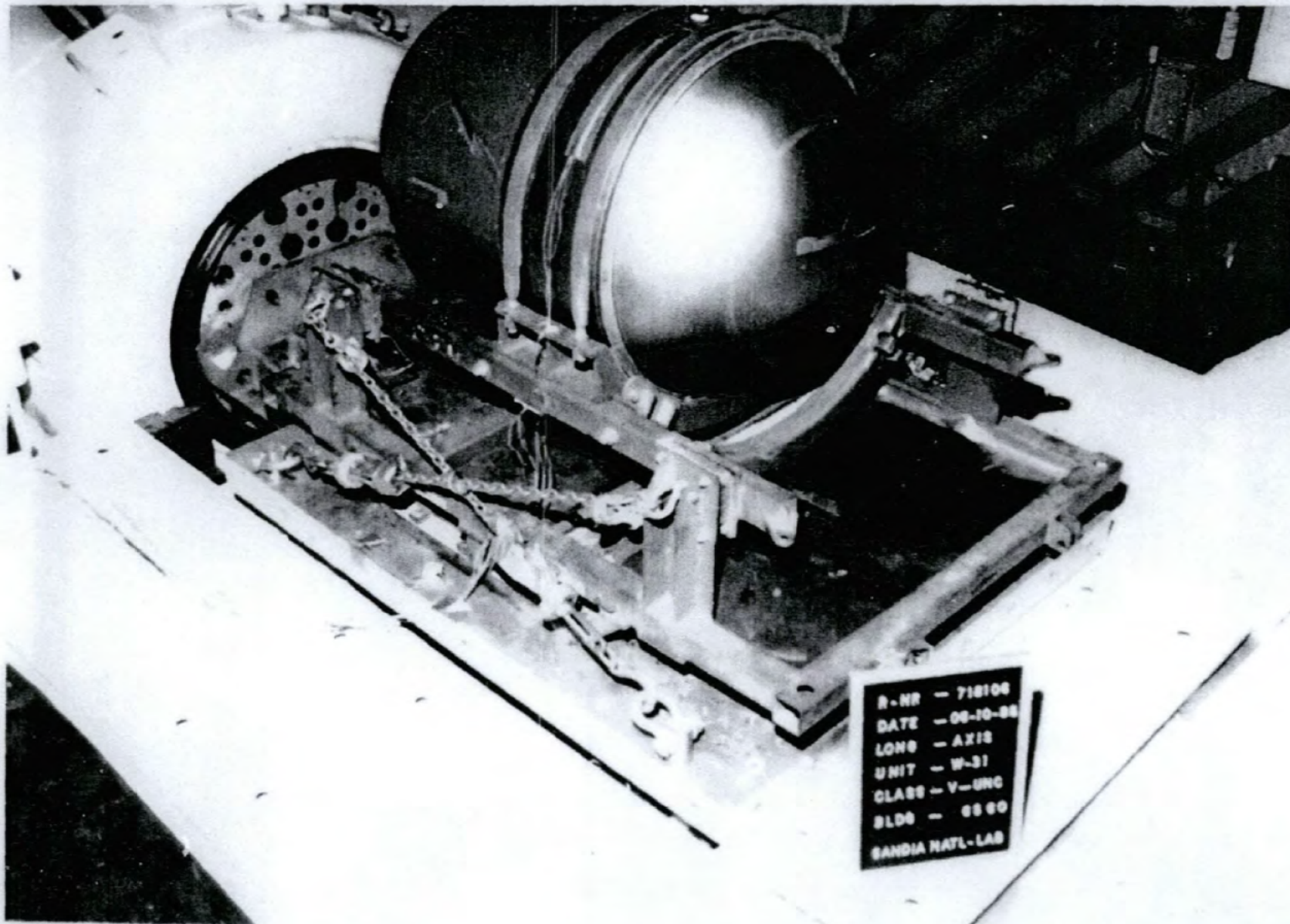
65

1874

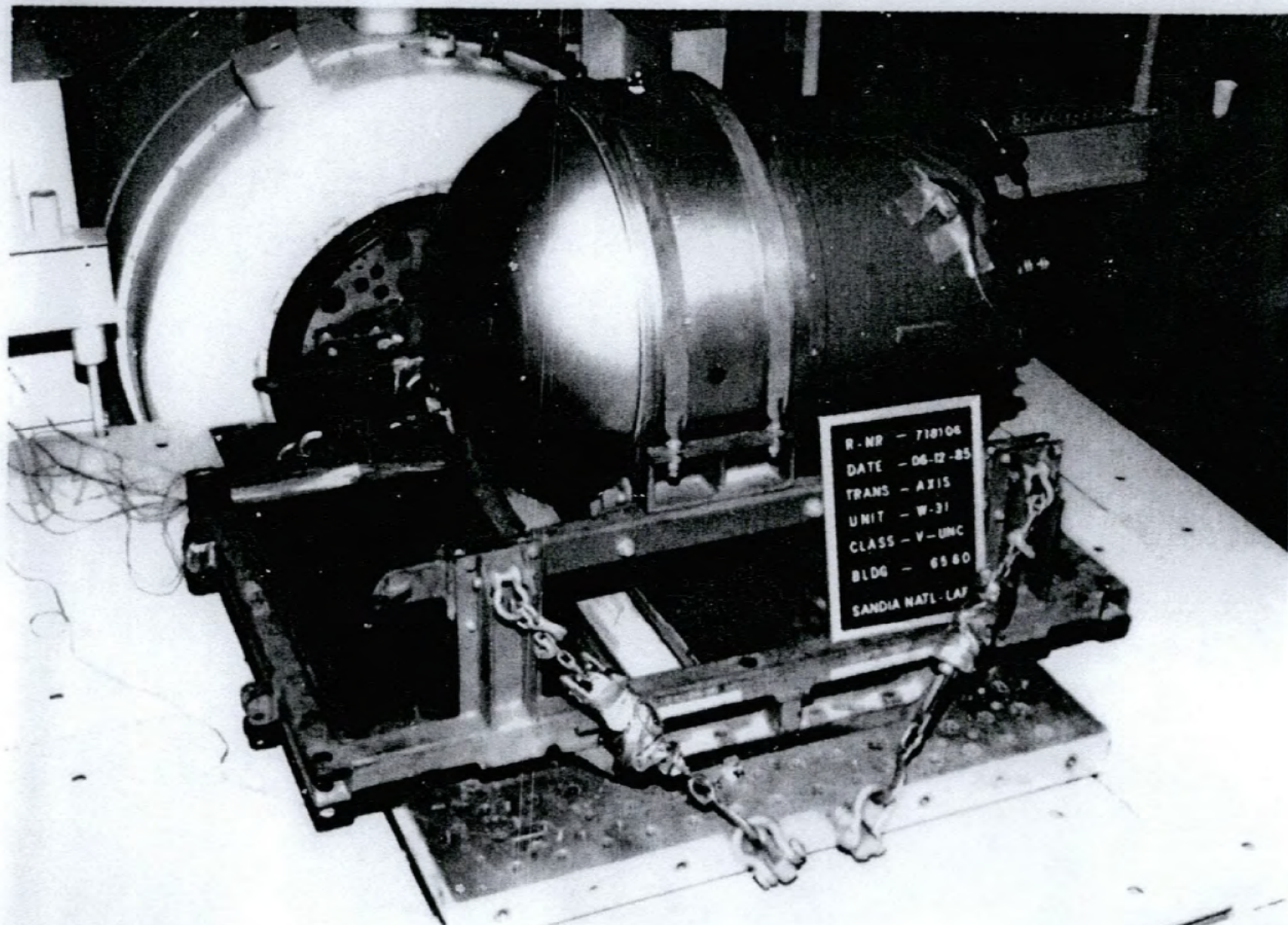
OFFICIAL USE ONLY



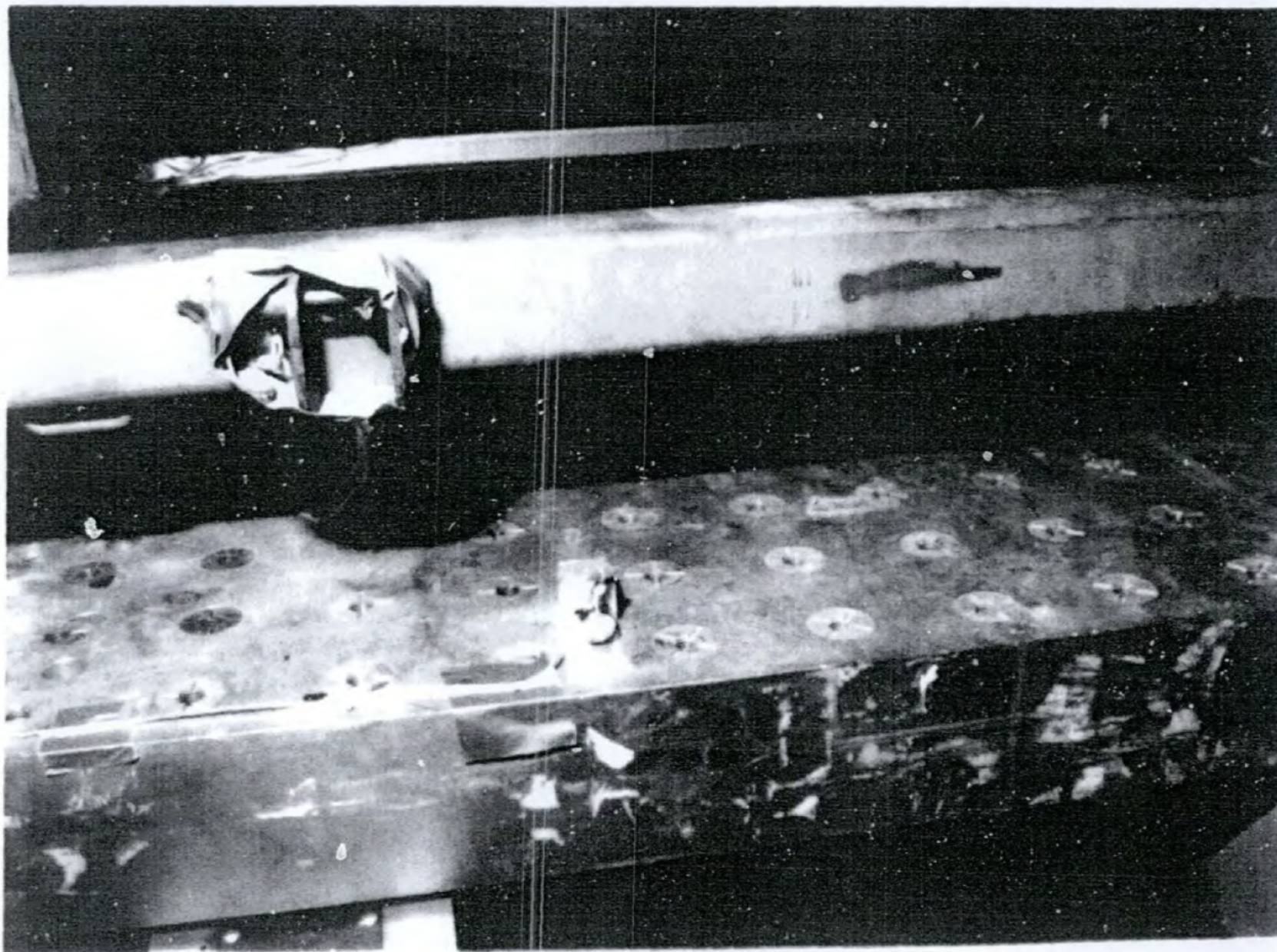
U01076



R-NR - 718106
 DATE - 08-10-88
 LONG - AXIS
 UNIT - W-31
 CLASS - V-UNC
 BLDG - 68 60
 SANDIA NATL - LAB

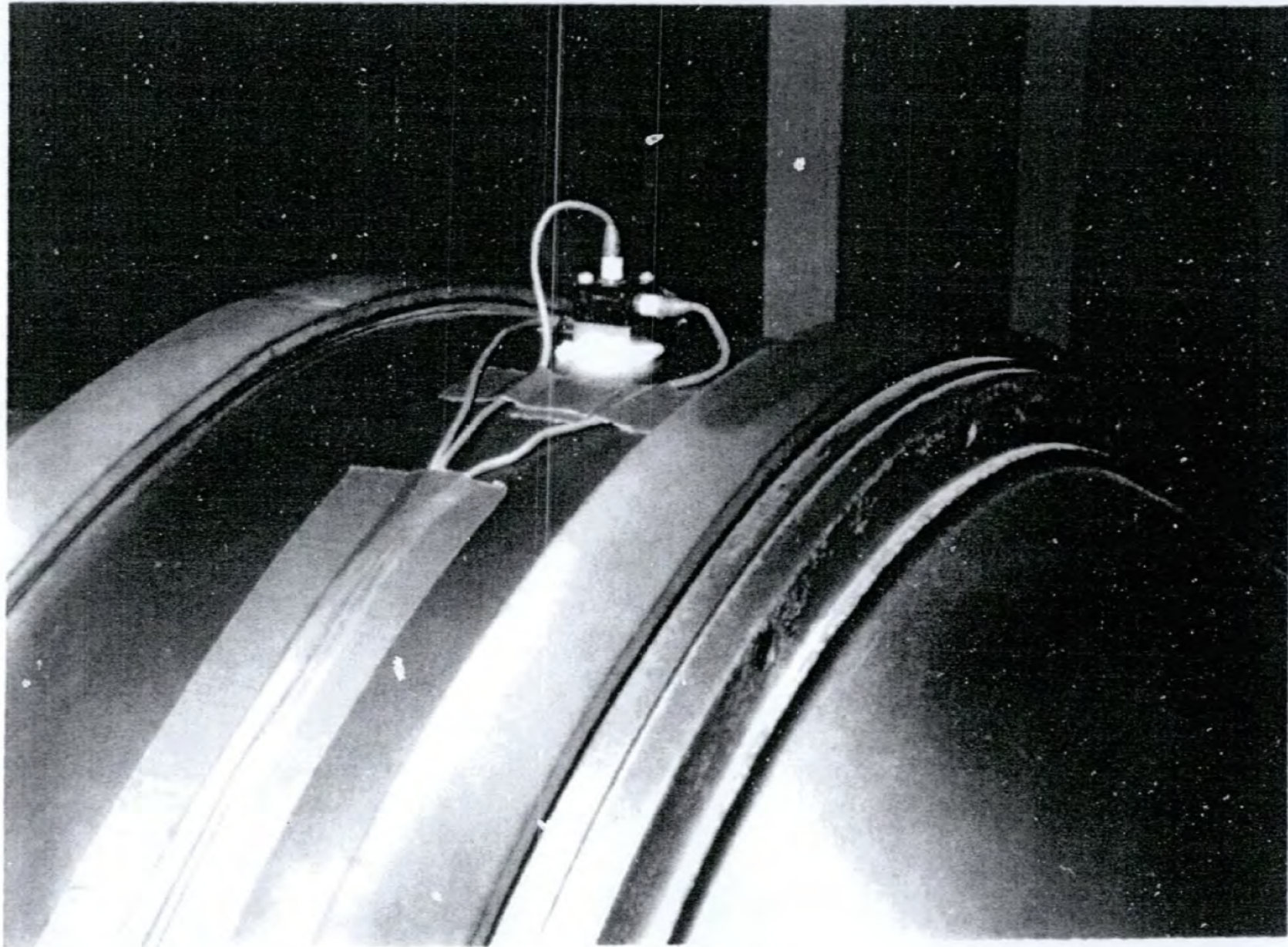


001077



001078

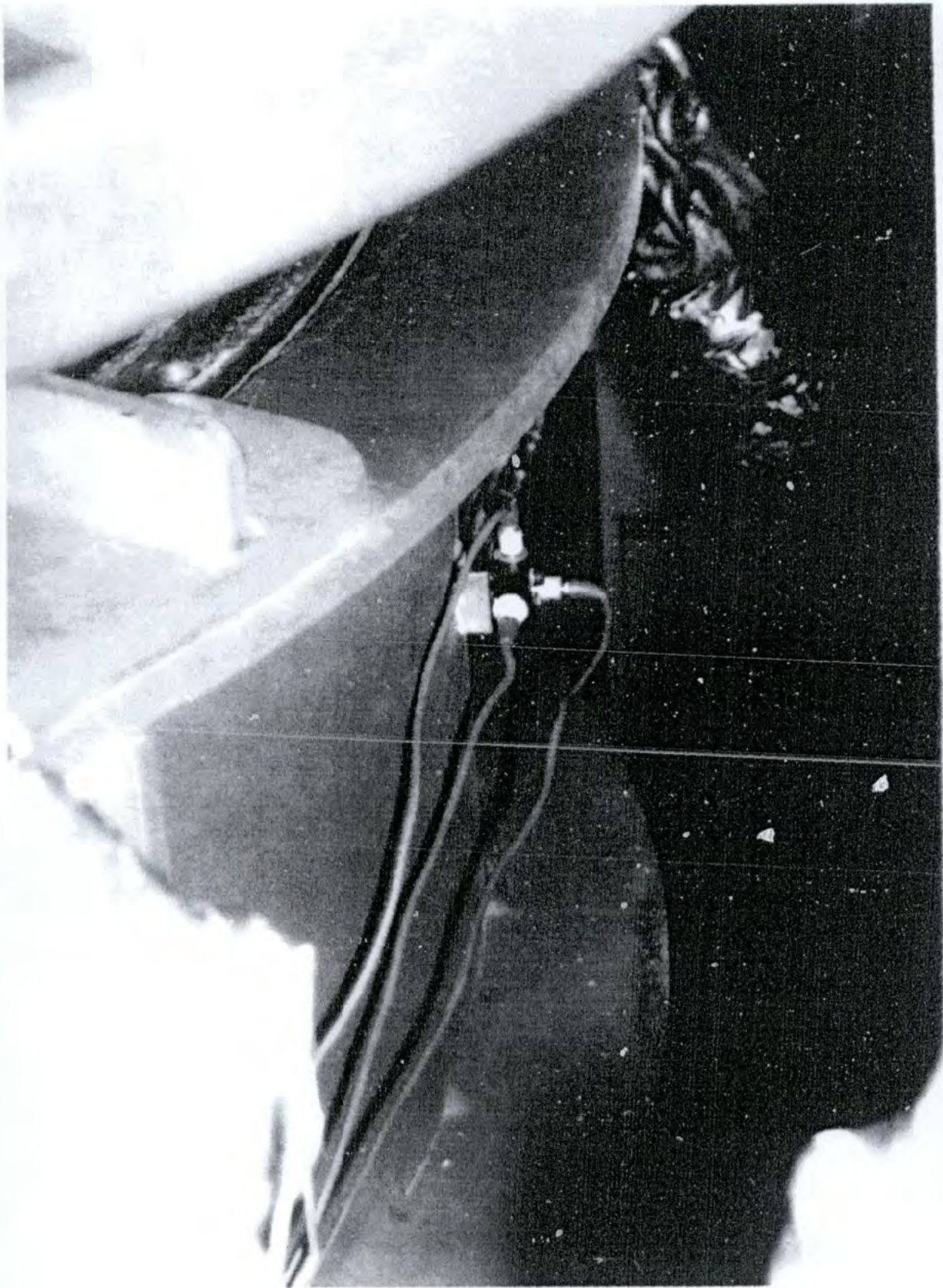
OFFICIAL USE ONLY



U01079

OFFICIAL USE ONLY

001080



001081

